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CIVILIAN SUBSTITUTION
FOR
MILITARY PERSONNEL:
AN ANALYSIS OF THE ISSUES

by

Bahadir S. Kose

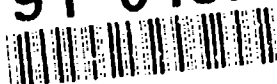
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Thesis Advisor:
Co-Advisor:

Mark J. Eitelberg
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Military Personnel:
An Analysis of the Issues

by

Bahadir S. Kose
First Lieutenant, Turkish Army
B.S., Turkish Military Academy, 1981

Submitted in partial fulfillment
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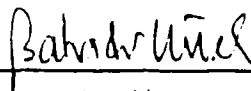
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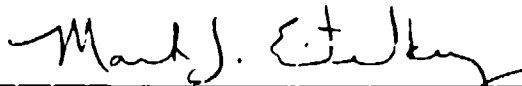
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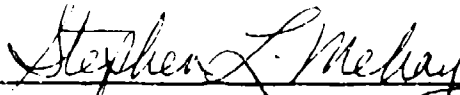


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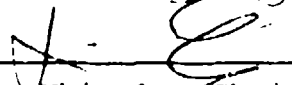
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Mark J. Eitelberg, Thesis Advisor



Stephen L. Mehay, Co-Advisor



David R. Whipple, Chairman
Department of Administrative Sciences

ABSTRACT

Efficient manpower utilization is essential to minimizing the cost, and a key element in that is the maintenance of the optimum balance between civilian and military manpower resources. Economic efficiency dictates that as the cost of military personnel begin to rise relative to the cost of direct hires, the Services would have an incentive to increase the use of direct hires, and vice versa. In our empirical analysis, results indicate that although DoD responded correctly to factor price changes measured in current dollars, DoD did not respond to changes in the real price of civilians. It should have substituted military personnel for civilians as the real price of civilians increased. In addition to the data analysis, this research reviews the issues on the concept of military-to-civilian conversions, determines the advantages and disadvantages of such conversions, examines the associated factors and their impact, and investigates the premise that such conversions could be detrimental to the military's mission even though they may be cost-effective.

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I. INTRODUCTION

A resource allocation issue that has received a great deal of attention over the past several years is the substitution of civilian employees for military personnel, known as civilianization. A continuing dialogue has centered on this issue in an effort to reduce the increasing manpower costs of the All-Volunteer Force (AVF). Proponents of civilianization have brought considerable pressure to bear on the Department of Defense (DoD) to substitute civilians for military personnel wherever possible.

However, in the rush to identify potential civilian substitutions, critics of DoD policies have frequently been more concerned with whether civilians can be used than with whether they should be used. That is, many substitutions have been made on the assumption that civilians are less expensive than military personnel, without a determination of whether such substitutions were in fact cost-effective. [Ref. 1: p. I-5-1]

Once the assumption that civilian personnel are less expensive is accepted, it is easy to see how the policy question turned to potential substitution opportunities, rather than to whether such substitutions would reduce costs. In other words, measuring the cost implications of a civilian substitution effort has, as a practical matter, become

secondary to the concern for how many civilians should replace military personnel.

The problem of determining what positions could potentially be manned by civilian personnel is not a trivial matter, given the softness of the criteria that must be used to make these allocation decisions. Historically, manning decisions have been the result of numerous factors, including military requirements, personnel management constraints, cost-effectiveness, and tradition. [Ref. 2: p. 292] "Military requirements" means, for example, that there are some job assignments such as the infantry that are intrinsically military in nature. The remainder of the jobs could theoretically be manned by either military or civilian personnel on the basis of the job tasks alone; but many of these jobs are, in fact, best manned by uniformed personnel in order to satisfy certain personnel management constraints, such as the maintenance of an adequate rotation base or the provision of sufficient career opportunities.

In addition to the fact that attention has primarily focused on civilianization potential, it is important to recognize that civilians have for the most part been viewed as direct-hire government employees. This is perhaps nowhere more evident than in the Congress, where the emphasis has been on urging DoD to perform various activities **in-house** rather than to contract out for particular services. However, the use of contractors to perform certain activities previously

conducted by military personnel (or, for that matter, by direct-hire civilian employees) is another potentially valuable source of military-civilian substitutions. The use of contractors to provide janitorial or maintenance services is just one example.

A. BACKGROUND

A brief look at past manpower conversion actions is necessary to develop some of the aspects that affect military-to-civilian conversions. The review divides the history of manpower conversions into two periods, using the experience of World War II as a dividing line.

1. Pre-World War II Conversions

The predecessors to the present day concept of substitutability can be traced back to the colonial period. This would appear to be an obvious fact since the United States has, throughout its history, placed a traditional reliance on the citizen-soldier. A natural and high degree of substitutability between civilians and the military has, in theory, existed as a built-in feature of the American military system.

Civilians occupied staff positions throughout the Revolutionary War, although officers generally were heads of the staff agencies. Civilians were used extensively in the engineer and logistical support and service functions to include acting as drivers for the artillery horses. At the end

of the Revolutionary War, the staff and support control agencies virtually disappeared from the Army. During the War of 1812, the operation was in many ways similar to the Revolutionary War except that soldiers replaced civilians as drivers for the artillery horses. Contractual transportation was used in the rear supply lines. The generally poor performance of the Army during the war led to a major reorganization of the Army. Secretary Calhoun established the technical bureau under the direction of military officers. Much of the field labor was still accomplished by civilians, but completely under military control. Contractual supply and transportation by civilian companies was stopped. [Ref. 3: pp. 9-10]

The Mexican War was the first time the Army had to support an overseas-type operation. The strength of the Army was such that troops could not be diverted from line to logistical functions. Since the Calhoun reorganization did not provide for supply and service organizations, this effort had to be accomplished by hiring transportation, mechanics, teamsters, and laborers. From the beginning to the end of the Civil War, the Army increased in size from about 10,000 to over 1,000,000 men. This vast increase in manpower, coupled with the great geographic expanse of the war, required the hiring of large numbers of civilians. The requirements for and the functions of the civilians remained basically the same as in previous wars. Before the Spanish-American War, more

organizational changes were made. An act consolidated the former Quartermaster General, Commissary, and Pay Departments. Additionally, this act established a service corps to do the work of clerks, engineers, firemen, carpenters, blacksmiths, packers, teamsters, and laborers. [Ref. 3: pp. 10-12]

Two of the greatest problems during the World War I were getting the troops to France and the in-country labor needs of the American Expeditionary Forces. The Army owned ships that were manned by civilians, and civilian-chartered ships were utilized to transport troops to France. To stop diverting combat soldiers to labor tasks, a labor bureau established in France hired local nationals. [Ref. 3: p. 12]

2. Conversions During and After World War II

The concerns of the General Staff for effective manpower utilization were evident during World War II. Of about 1,000,000 civilian workers, 8 percent were in general administration overhead, 7 percent in procurement, and the remaining 85 percent were in arsenals and manufacturing, supply depot and port operations, and construction. Officers and enlistees were still used extensively for the administrative operations at posts in the United States. This concern for effective management of manpower resources resulted in one of the earliest written policy statements on civilian substitutability. War Department Circular 103, 15 April 1915 stated:

...While the manpower pool under jurisdiction consists of both military and civilian categories, each group constitutes an essential part in the War Department program which contemplates the use of civilians in those positions where military skills and military status are not essential...The release of general service personnel for duty with combat units is one of the primary objectives of the War Department. In carrying out that objective, the policy of the War Department is to substitute limited service military personnel, including personnel of the Women's Auxiliary Corps, for general service personnel. Replacements of military personnel by male civilians will be confined to those over draft age, or unfit for military service, and not engaged in an industry equally vital to the military or civilian effort. [Ref. 3: p. 14]

Other minor amendments of the World War II policies appeared in later policy statements and documents. Funding appears to have an increasingly limiting factor as these revisions basically reaffirmed the quoted policies within space and fund limitations.

"Project Native Son", one of the earliest Air Force conversion projects, coordinated the manpower requirements with congressional limitations and replaced 43,000 military personnel in overseas areas with approximately 31,000 foreign or native personnel during 1954 and 1955. Since the Korean War enlistments were ending, a shortage of skills occurred. While Project Native Son utilized foreign personnel in civilian substitution overseas, "Project Home Front" made similar substitutions in the United States beginning in 1955 and 1956. [Ref. 4: pp. 9-10]

"Operation Teammate" was undertaken during 1955 and extended into 1956. This was a deliberate Army program to

carry out DoD policies to reduce the number of military personnel in support-type activities with civilians and utilize the military spaces saved to create new units within the combat force structure of the Army. Operation Teammate was terminated after the Army had hired a total of 9,803 civilians to replace 10,306 military personnel. The total programmed number of 12,000 civilians was not hired due to restricted funding, reduced civilian space ceilings, and a scarcity of certain skills in the civilian labor market. [Ref. 3: pp. 16-17]

In 1962, the Army agreed to convert 638 military positions in commissaries and nonappropriated fund activities to 620 civilian spaces. Later, the Army was informed by the Office of the Secretary of Defense (OSD) to revise the plan to provide for a conversion of 577 military positions to 471 civilian spaces, without an increase in funds. This required the Army to absorb the cost of 471 civilian spaces and to either eliminate or absorb 106 civilian positions. In reality, this effort was the only implemented portion of a large planning program to convert 6,000 military positions, titled "Project 6". The planned conversions, once again, involved support and service type positions. [Ref. 3: p. 17]

The next major DoD project, called "Project Mix Fix", was initiated in January 1966 to support President Johnson's memorandum to expand the military without calling up the reserves. Sixty-thousand civilians were to be hired to serve

in place of 75,000 officers and enlistees in noncombat positions within all the Services. [Ref. 5: p. 125] The South East Asia (SEA) conflict was the primary force behind the increased use of civilians. Mix Fix was developed to provide more personnel for the SEA conflict through the civilianization of the Continental United States (CONUS) positions, rather than to trim the costs of the military. [Ref. 4: pp. 10-14] Phase I of the program was not considered complete until June 1967, when 99 percent of the conversions had been accomplished. Phase II, a follow-on civilianization program, was being planned and coordinated between OSD and the Services while Phase I was still in progress. The planning for Phase II differed from Phase I significantly. Some degree of flexibility was provided by the Secretary of Defense to categorize the program in two sections: soft skill positions, in which civilian labor market was expected to be adequate, and other positions, which the Services could plan to convert but for which the current labor market might be inadequate. [Ref. 3: pp. 39-40]

In 1973, another program was initiated, converting 48,000 military positions to 40,000 civilian positions. [Ref. 5: p. 125] The possibility of monetary savings was given as a reason because military manpower positions require additional manpower positions to be budgeted for training, transients, personnel support, medical treatment, welfare, and recreation. [Ref. 4: p. 13]

In 1977, the Air Force eliminated 1,150 jobs previously held by military members by the planned change to civilian manning of 13 aircraft and warning sites within the Alaskan Air Command. Also, the Air Force turned over complete operation of its officers' clubs to civilian employees, beginning in 1978 and extending over three years. [Ref. 5: pp. 72-73]

The city-protecting sites of antimissile firing units manned by civilians were formed into units of the National Guard and Reserve. The sites were permanent, so that the unit locations became merely work-sites for local residents. Military units of the National Guard and Reserve are already partially manned by full-time civilian employees of the military establishment. One of the most impressive examples of support functions performed by civilians is demonstrated by the Navy's Military Sealift Command (MSC), in direct support of fleet operations at sea. Civilians operate efficiently many of these ships which are averaging 30 years in age. [Ref. 5: pp. 71-72] Also, to ensure the presence of adequate technical expertise, the Navy has for years used contract civilian engineers on board deployed ships to fill the middle and upper enlisted paygrade deficit in various ratings. These technical service representatives served aboard Navy combatant vessels throughout the Vietnam War, operating within Vietnam in support of helicopter operations, and were

deployed to the Indian Ocean/Persian Gulf theater. [Ref. 6: pp. 20-23]

With all these actions, the number of direct-hire civilians rose to 1,275,000 in 1969 during the Vietnam conflict and dropped to 1,049,000 by 1973, at the beginning of the All-Volunteer Force (AVF). Civilian employment continued to drop during the AVF period, and the number of full-time permanent employees reached a low of 830,000 by the end of 1980. Then, employment started increasing with President Reagan's military build-up policy, and reached 210,000 by the year 1987. Because of the tight defense budgets, civilian employment started decreasing again since 1987, and the total employment is around 900,000 now.

Another trend is that there has been a gradual shift in the employment patterns within the direct-hire employment group, as well as an increase in the number of nonwage-rate (general schedule) civilians. The data, though, are not clear with respect to the extent to which this trend is merely a reflection of the "grade creep" problem (grade enrichment) found elsewhere in both the military and civil service personnel systems, or whether it reflects a genuine move toward a more technically-oriented force. [Ref. 2: pp. 294-295]

The Services are near the maximum numbers of military-to-civilian space conversions which can be absorbed because of previous conversions, contracting out, and other

constraints (e.g., use of civilians in combat, protection of the rotational base, and imposition of congressional or budgetary restraints on numbers of civilians). At present, there are no major conversion actions that are going to take place in DoD. However, conversions appear to be an on-going effort in various units, but they generally occur in small proportions where local commanders can make effective changes. [Ref. 4: p. 14] On the other hand, lifting the legal and budgetary constraints on the use of civilians in combat-type positions (some have already been exposed to combat in previous conflicts¹) could make major substitutions possible in the future.

B. SCOPE OF THE RESEARCH

The current DoD policy outlines the use of civilian personnel in place of military personnel, prohibits conversions which require combat-related personnel or critical military skills, and uses cost as the primary factor to

¹During World War II merchant marine seamen were exposed to combat on a regular basis as a result of enemy submarine action. The U.S. Maritime Service's percentage of battle deaths, based on the total who served, was 2.8 percent, second only to the U.S. Marine Corps with 2.9 percent. Many of these ships were in escorted convoys or carried armed guards thus placing them in a quasi-combat status. The U.S. Merchant Marine, Military Sealift, Navy technical representatives, and commercial construction crews served both in-country and in hostile waterways during the Vietnam conflict. The extensive use of contractor construction employees to supplement the Army Corps of Engineers and Navy Construction Battalions was unique and example-setting. [Ref. 6: p.17]

determine the position conversions. (As a matter of fact, many substitutions have been made on the assumption that civilians are less expensive than military personnel, as indicated above.) Although cost is a factor that must be considered, there are other human resource factors that have an effect on the organization and its personnel.

The purpose of this research is to review the issues on the concept of military-to-civilian conversions, determine the advantages and disadvantages of conversions, examine the associated factors of conversions and their impact with respect to military functions, and investigate the premise that such conversions could be detrimental to the mission of the military even though they may be cost-effective.

Efficient manpower utilization is essential to minimizing the cost of any required level of defense, and a key element in efficient manpower utilization is the maintenance of the optimum balance between civilian and military manpower resources. It is within this context that this research undertakes an analysis of issues to determine the feasibility of civilian substitution.

C. THE RESEARCH QUESTIONS AND METHODOLOGY

This research examines issues related to civilian substitution for military personnel. The primary focus of the research effort concerns policy approaches used to determine whether a military billet can be converted to a civilian

position. Secondary research issues involve the military-essential criteria used in determining whether a military billet is eligible for civilianization, the military and civilian cost factors that should be included in determining the cost-effectiveness of civilian substitution, other factors that should be considered in substituting civilians for military personnel, and whether historical data indicate that military-civilian trade-offs have been made according to relative prices.

The general methodology includes the following: collecting information and reviewing the issues on civilian substitution; analyzing literature in terms of common threads, inconsistencies, problems, and so on; analyzing historical data on the trade-offs made by DoD in response to changes in relative prices (i.e., cost); and interpreting findings.

D. ORGANIZATION OF THE STUDY

Chapter 2 examines the major issues in civilianization, the "military-essential" criterion used in military-to-civilian conversions, military and civilian cost factors, and other factors being considered in substituting civilians for military personnel. In chapter 3 the historical data covering the period 1974-1989 are reviewed to determine whether previous military-civilian trade-offs have been made according to the relative prices of each input. In the last chapter, the findings of this study are summarized and interpreted.

II. MAJOR ISSUES

The Department of Defense (DoD) follows three principles in determining the mix of the defense labor force. First, the active military manpower in peacetime should be at the minimum level necessary to satisfy national security objectives. Second, the private sector should be relied on to provide goods and services to the maximum extent possible. Third, the government should conduct its operation in the most cost-effective manner possible. [Ref. 7: p. 26] These principles are reflected in the policies that determine the mix of the defense labor force.

This policy agrees with the intent of Congress, as stated in Public Law 93-365 enacted in 1975:

It is the sense of Congress that the Department of Defense shall use the least costly form of manpower that is consistent with military requirements and other needs of the Department of Defense. Therefore, in developing the annual manpower authorization requests to Congress and in carrying out manpower policies, the Secretary of Defense shall, in particular, consider the advantage of converting from one form of manpower to another (military, civilian, or private contract) for the performance of a specified job. [Kef. 8: p. 4]

In accordance with this law, the Secretary of Defense issues more specific guidance to each service. The policy of DoD is that each position must be filled by a civilian unless there is a good reason, since this is seen as a means of maintaining an adequate force levels in an all-volunteer

environment, and since civilians are said to be less costly.

As stated in DoD Directive 1100.4:

Civilian personnel will be used in positions which do not require military incumbents for reasons of law, training, security, discipline, rotation, or combat readiness, which do not require a military background for successful performance of the duties involved, and which do not entail unusual hours not normally associated or compatible with civilian employment. [Ref. 9: p. 5]

A later directive, DoD Directive 1400.5, affirmed this basic policy in 1970, omits reference to the unusual hours criterion. It also enumerates several benefits of civilianization that:

Use of civilian employees affords abilities not otherwise available, assumes continuity of administration and operation, and provides a nucleus of trained personnel necessary for expansion in any emergency. [Ref. 8: p. 6]

The key assumption made in some of these regulations is that civilian employees are always less costly. The idea of civilians being less costly is a product of the All-Volunteer Force (AVF). Under conscription, military manpower was cheap. Since the initiation of AVF, military manpower costs increased steadily to maintain the appropriate accession and retention levels needed to meet the Services' requirements. As a result of these increasing costs, the use of civilians in place of military personnel has become economically attractive. However, in the rush to identify substitution potential, the policies have been more concerned with whether civilians can be used than with whether they should be used. Many substitutions have been made on the assumption that civilians

are cheaper than military personnel, without determining whether such substitutions were in fact cost-effective. Albrow, in one of the studies conducted for the President's Commission on an All-Volunteer Armed Force (on Gates Commission), simply assumed that civilians were less expensive, citing casual observations, such as the supposed lower turnover rates exhibited by civilian personnel [Ref. 1: p. I-5-2]. To illustrate the weakness of this argument, Cooper noted that direct-hire civilians have averaged turnover rates of between 20 and 25 percent, as compared with about 25 percent for military personnel [Ref. 2: p. 291]. There appears to be little difference between the two sources regarding turnover behavior.

In light of DoD's approach on the civilianization issue, recommending that civilians be used in positions which do not require military personnel for reasons mentioned earlier, the Services set forth their policies. The Army established the following policy in AR 570-4:

National policy provides that the use of military personnel be limited to positions which clearly require military incumbents. The use of civilian employees affords abilities not otherwise available, assures continuity of administration and operation, and provides a nucleus of trained personnel necessary for expansion in any emergency. [Ref. 10: p. 2]

The Air Force laid out its basic policy regarding the use of military and civilian personnel in AFR 26-1 as follows:

Workloads will be performed by military for reasons of military essentiality....Workloads that do not require military for military essential reasons are performed in-

house by in-service civilians or by contract. [Ref. 4: p. 3]

The common point in all these regulations is that once the assumption that civilian personnel are less expensive is accepted, the policy question turns to potential substitution opportunities, rather than to whether such substitutions would actually reduce costs. The following sections provide discussion of several criteria for civilianization--including military-essential assignment, cost, and other factors.

A. THE MILITARY ESSENTIAL CRITERION TO DECIDE WHETHER A PARTICULAR BILLET CAN BE SUBSTITUTED BY A CIVILIAN

The problem of determining what positions could be manned by civilian personnel is not a minor point, given the softness of the criteria that must be used to make these allocation decisions.

1. Former Studies

Historically, manning decisions have been the result of a number of factors, including military requirements, personnel management constraints, cost-effectiveness, and tradition [Ref. 2: p. 292]. However, Smoker notes that, traditionally, comparisons of uniformed and civilian personnel have not been made, because for certain missions involving combat or mobilization or training, military personnel were considered more valuable than civilians. Thus, Smoker points out that it is necessary to determine in what instances

military manpower is perceived to have greater value than civilians, and in what instances military and civilian personnel could perform equally well. Then it must be determined whether military or civilian personnel are the least costly resource to perform a certain workload. [Ref. 11: pp. 24-26] To determine where the use of military personnel yields a greater benefit, he examines workloads traditionally performed by the military. His list includes the following:

- Combat workloads performed by combat aircrews, perimeter defense sentries, surface-ship and submarine crews, and tank crews, etc.
- Direct combat and mobility workloads performed by field maintenance crews, munition loaders, intelligence collectors, etc.
- Training workloads required to maintain the high degree of proficiency necessary to respond to the challenges of combat, direct combat support, and mobility. [Ref. 11: p. 26]

Although these and other workloads are generally perceived to be military, Smoker notes that there are few instances where in-house and contract civilian manpower have performed tasks of this nature.² In his list, whether combat forces--for example, Army or Marine Corps infantrymen--should be military or civilian is obviously not at issue. And few would doubt that those who directly support the combat forces and who are

²The use of logistics rapid aircraft maintenance and field teams during the Vietnam conflict are an example of in-house civilian personnel performing a direct combat support. And, the civilian airlift of cargo into Vietnam is an example of military workloads being contracted.

expected to operate in a combat zone should be uniformed personnel. The question is what constitutes the combat forces? The actual distinctions are not as sharp as they initially appear. As Binkin questioned: "...must crews flying and servicing airlift aircraft similar in configuration to those used commercially, such as the C-5, be military?"; or, "must naval support ships, such as oilers and tenders, be manned by naval personnel?" The problem becomes even more difficult to judge, when one considers that U.S. combat forces currently deployed rely on foreign national civilians for certain forms of support. [Ref. 9: pp. 52-53] Another point in Smoker's definition of military essentiality is the mobility requirements. Estimating the size of the deployed forces is straightforward: for the Army, Marine Corps, and the Air Force, it includes troops deployed overseas; and for the Navy, it incorporates sailors aboard ships or overseas. On the other hand, the number of billets in units in the United States but designated for deployment--called deployable billets--is more difficult to estimate. The number of positions in table of organization and equipment (TO&E) units provides a reasonable approximation for the Army. These are combat, combat support, and combat service support units expected to deploy during wartime. In contrast, the positions in table of distribution allowances (TDA) are defined as those remaining in the United States. For the Navy, shore establishment units are not specified for deployment so that there is no deployable

position in CONUS for the Navy. The number of Air Force personnel that might be deployed is the most difficult to ascertain. Binkin explains that it depends on assumptions about how long a war might last, expected attrition, and the like, and adds that under worst-case scenarios, the Air Force would be likely to consider its entire force as deployable. [Ref. 9: pp.53-54]

Distinction between civilian and military incumbency of a position depends upon a number of factors; but Wermuth recognizes the basic distinction as the relationship of the position's incumbent to battle, to combat against an enemy. Wermuth quotes Greenspan ("The Modern Law of Land in Warfare") in discussing this point:

The distinction between combatants-noncombatants within the armed forces must be taken to correspond to the distinction between fighting troops and troops in service units. The fighting troops of an army carry out the actual military operations. Whereas the service troops minister to the needs of the former and supply their various requirements....The functions of noncombatant elements within the armed forces do not ordinarily bring them into actual conflict with the enemy, but except for medical personnel and chaplains....[Ref. 5: pp.11-12]

To determine civilianization potential, the general approach was to apply judgmentally a set of selected manpower utilization criteria to the position authorizations for each service. These criteria were derived from DoD manpower utilization criteria published in DoD Directive 1400.5. These seven criteria were: Law, training, security, discipline,

rotation, combat readiness, and military background [Ref. 12: p. 7].

Each of the Services has established regulations to amplify the general directives, and because of their vague form each has had wide discretion in defining the criteria to be applied in determining whether or not a position is to be filled with uniformed personnel. [Ref. 13: p. 50] Binkin gives the Air Force guidance as an example which specifies the positions that military personnel will be used:

- In a unit/position directly engaged in combat functions, and in direct combat support functions.
- In a position that requires the exercise of command control, military training and discipline and which, by law, must be exercised by military personnel.
- In a unit that has combat mobility requirements.
- In a position in which military personnel must gain experience before they can assume responsibility for a combat function.
- In a position that requires certain skills and knowledge acquired primarily through military training.
- In a position where, to properly discharge its duties, a civilian incumbent would be forced to compromise this legal rights and privileges, or would be required to take action restricted by law to military personnel.
- In a position in any area, as necessary, to allow for normal career progression, and to support the CONUS overseas rotation prescribed by the Headquarters United States Air Force.
- In a position that is ordinarily filled by an in-service civilian, when no civilian manpower authorization/skills are available. [Ref. 9: pp. 5-6]

Binkin continues that for certain positions not considered to require a military incumbent, the services are confronted with a choice: whether to fill the billet with a civilian service employee or to contract for the services. Here, he points out the prejudice of the official guidance toward contracting. The Services are guided by:

...the Government's general policy of relying upon the private enterprise system to supply its needs for products and services, in preference to engaging in its own commercial or industrial activity. [Ref. 9: p. 6]

With regard to in-house versus contract-out determinations, the Office of the Assistant Secretary of Defense's study on civilianization expresses the policy as that "relying upon the private enterprise for goods and services except in those instances where it is not in the national interest to do so." The study cites the Office of Management and Budget Circular No. A-76, which lists the circumstances as:

When procurement from a commercial source would disrupt or materially delay an agency's program, when it is necessary for the Government to conduct a commercial or industrial-type activity for purposes of combat support or individual and unit retraining of personnel or to maintain or strengthen mobilization readiness, whenever the product or service is unavailable from an alternative source when needed, and finally, if procurement from the private sector would result in higher cost to the Government. [Ref. 8: p. 2]

Albro, in his study for the Gates Commission, grouped the authorized positions in each service into logical categories based upon the force component, function or skill involved. The categories were then analyzed in terms of seven

utilization criteria³ to determine whether one or more of the criteria were met sufficiently to justify military rather than civilian manning. The analysis proceeded in five steps:

- Identification of those force components which must be prepared for combat deployment at all times (criterion of combat readiness).
- Identification of those positions which require military manning because of the skills involved (all criteria).
- Identification of those positions in the training base which require military manning (criterion of military background).
- Identification of those positions in the command and control element which require military manning (criterion of military background).
- Identification of those positions which require military manning to meet service rotation objectives (criterion of rotation). [Ref. 1: p. I-5-4]

The remaining positions were designated as potentially substitutable. A cost analysis of these spaces was conducted to determine the potential budget reductions which might be realized through civilian substitution.

A report on the mix of the defense labor force by the Office of the Assistant Secretary of Defense Manpower and Reserve Affairs indicates the same point as Albro did, that "the policy of DoD is that all spaces be filled by civilians unless there are compelling reasons otherwise." Military incumbency is justified as follows:

³Seven criteria are law, training, security, discipline, rotation, combat readiness, and military background to justify a military incumbent in a position rather than a civilian.

When there is a need in law for a military person, when the type of work to be performed involves combat or direct combat support, when the position requires military experience, when a military billet in the United States is needed to provide for breaks between overseas assignments, or when the position is used to provide training and experience to military personnel. [Ref. 8: p. 2]

Morthole, in his study of converting military authorizations for Air Force maintenance personnel to civilian positions, refers to the AFR 26-1, which establishes the procedures regarding the manpower mix within the Air Force. The regulation outlines the steps involved to determine which workloads require either military or civilian personnel. As pointed out in the previous section, AFR 26-1 states that "the workloads will be performed by military for reasons of military essentiality." Those positions that do not require a military member will be "performed by in-service civilian employees or by contract". In addition, the regulation includes criteria and coding instructions for military-essential positions, the Unsatisfactory Rotation Index program, and the Critical Military Skills (CMS) program. Morthole interprets these three instructions as a result of past conversion problems.

Military-essential criteria describe specific positions which require military personnel to perform duties. According to AFR 26-1:

The determination on whether or not a position must be military will, in some cases, be judgmental. If so, the decision must be as objective as possible and backed up by supporting rationale. [Ref. 4: p. 6]

Several codes are described which cross a spectrum of duties from combat positions to the traditional occupation of bandsmen and honor guards. Morthole pointed out the only specific reference to combat capability, referring back to AFR 26-1 again, those positions which "if not performed, could impair the Air Force combat capability within approximately a 36-hour period."

The Unsatisfactory Rotation Index program requires enough Continental United States (CONUS) positions to allow military personnel an assignment in the United States to reduce the amount of overseas time that can have an adverse effect on morale.

AFR 26-1 also introduces the Critical Military Skills program, which has the following objective:

To help reduce wartime military skill shortfalls through appropriate civilian-to-military position conversions, contracting decisions, and other manpower related actions. This program promotes improved readiness by ensuring adequate military manpower by skill; and effective mix between active and reserve components; and a proper balance between combat and combat sustaining forces. [Ref. 4: p. 6]

Delaune, in his review of the early 1970s civilian substitution concepts, identified military-only positions, which included:

Command and control positions, positions required for recruiting, positions involved in teaching military subjects, positions providing direct logistical or technical support for combat units, and positions required by law and/or treaty to be occupied by military personnel. [Ref. 3: p. 22]

For each of the functional areas such as administrative, medical, etc., a numerical rating was assigned, ranging from highly substitutable to least possible for substitution. The following types of positions were considered "non-substitutable" according to DoD policy, and were excluded from consideration:

All strategic retaliatory forces, continental air and missile defense forces (except certain administrative, and clerical support personnel), general purpose forces (except certain types), airlift and sealift forces, reserve and guard forces, research and development, general support (with some exceptions), all military assistance overseas. [Ref. 3: p. 23]

Delaune noted that by establishing such criteria, "functions related to combat and direct combat support were considered exclusive military functions which could be performed by military personnel only."

2. Findings

For many reasons having to do with modern changes in war, organizational dynamics, and personnel administration, the proportion of uniformed persons who do the actual war-fighting is declining within military establishments. At the same time, the proportion of uniformed persons who perform supporting activities is rising, allowing more civilians to also become engaged in military support. [Ref. 5: p. 2] Wermuth cites Defense Manpower Commission calculations, showing that as many as 65 percent of all active-duty military personnel are primarily involved in support activities.

Policy changes are required if one wants to go beyond the position conversions having been done so far. It would dictate using civilians in units and under conditions that have traditionally been considered the military's domain. In today's changing military environment, further substitutions may be required to reduce the defense budget and allocate limited resources more effectively.

Binkin gives specific examples to show the possibility of further conversions. One of them is in Navy fleet support. Manning support vessels with civilians is not a new concept. The British Royal Fleet Auxiliary has been manned by civilians for many years. The problem, as Binkin points out, is the risk of relying on federal civilian employees for essential fleet support in the event of a war or other military contingencies. [Ref. 9: pp. 57-58] On the other hand, Binkin adds that such concern does not appear to be well-founded, and quotes Emery's observation on civilian-manned ships that:

in Military Sealift Command's 27-year existence, including the six years of Navy fleet support activity, command operations have never been hampered by strikes or work slowdowns. [Ref. 9: p. 58]

The General Accounting Office (GAO) similarly cites the Navy's controversy that combat readiness is adversely affected by shortages of trained and experienced sailors at sea, and recommends that the Navy use civilians in shipyards to accomplish work that is normally done by ships' crew during overhaul. The crew released from overhaul work could be

reassigned to ships at sea, according to GAO, by alleviating some of the critical shortages on these ships, or skilled technicians could be transferred to critical shore activities such as the Shore Intermediate Maintenance Activities (SIMAs). In response to the GAO's recommendations, the Navy has set up a pilot ship decrewing program. One approach is to increase the utilization of available skills through reassignments of the kind suggested in this GAO report; another is to increase the skill levels through training during overhaul. In both cases, it would be necessary to free the ship's crew from all or part of the work they would normally do during overhaul, and assign this workload to civilians at the shipyard. [Ref. 14: p. 1]

Another specific example given by Binkin is the possibility of transferring the part of airlift and air refueling missions now carried out by the U.S Air Force to civilians. Again, the dangers of relying on civilian personnel have to be considered; but, as Binkin points out, the existing national policy leans on the use of the Civil Reserve Air Fleet (CRAF) in mobilization planning. CRAF policy gives authority to the President to mobilize elements of U.S. commercial airlines during emergencies, which also covers the airlift personnel and equipment. [Ref. 9: pp. 58-59]

Because of the nature of its operations, the Army appears to have fewer opportunities than the other Services to employ civilians in units traditionally manned by soldiers.

However, support units operating exclusively in rear areas could be considered for civilian substitution [Ref. 9: p. 59].

GAO, in its study of military personnel in industrial facilities, observes that the majority of military personnel are performing supervisory, administrative, and other technical functions. GAO believes that civilians could do these functions; in fact, civilians were occupying either first-or second-level supervisory positions in the operating departments at the activities mentioned. Therefore, GAO recommends that the Secretary of Defense direct each military department headquarters in industrial facilities to review all types of personnel positions, except those designated as being deployable, or as having a combat or combat-support mission; and, for each type, to determine whether:

- The position must be filled by military personnel.
- The position could be filled by either military personnel or civilians and the circumstances in which the position would be used for military personnel, such as for rotation or for career development.
- The position need not be filled by a military incumbent and should be filled by a civilian. [Ref. 7: pp. 18-19, 26, 29-30]

On the other hand, efforts to allocate resources effectively may hamper wartime readiness, which should be considered in all conversion decisions. For example, attempts to balance medical manpower requirements with budgetary constraints has led to staff reorganization within the Medical

Service. In 1985, a budget initiative resulted, whereby the Assistant Secretary of Defense for Health Affairs was charged by Secretary Weinberger to "redirect resources and change the composition of the medical force to ensure medical readiness as the top priority." As a result, beginning on October 1, 1987, the Dental Corps relinquished 98 active duty dental officer authorizations to favor the Nurse Corps. To compensate for the lost active duty dental slots, 98 civilian contract dental slots were made available and located at Air Force bases throughout CONUS. Civilianization of the Dental Corps may not reduce the Corps' clinical capability to produce adequate dental services to maintain a peacetime military. But, since civilian contract dentists lack the readiness education and training, the absence of 98 dental officers schooled, practiced, and dedicated to the military readiness mission may be realized in peacetime today as well as in a possible wartime scenario. Dental officers may be called upon to rely on readiness skills in peacetime, assisting in medical mass casualty management in response to such conditions as natural disasters (flood, tornadoes, earthquakes, etc) and military/nonmilitary accidents involving multiple victims. Acts of terrorism also present a threat, especially in the military environment, to which dental officers (as part of a base disaster team) might be expected to respond. Civilianization also poses a long-term threat to medical readiness as it represents a possible source of instability

in CONUS dental manpower. In the short term, civilianization may not change the net Air Force peacetime clinical capability. It does, however, represent a portion of the total CONUS manpower which can change annually through contract renewal or disapproval. [Ref. 15: pp. 2, 3, 9-12]

For the reasons mentioned above and the possible effects of civilianization on wartime readiness, additional proposals to replace military personnel with civilians should be carefully examined before any attempt is made to further change the structure of the force.

B. THE APPROPRIATE MILITARY AND CIVILIAN COST FACTORS FOR COMPARISON

There is a large and growing concern regarding the cost of national defense. Public opinion is that the economic and social ills of the country are largely the fault of increased defense spending. [Ref. 16: p. 1] Much of the interest in defense spending has focused on personnel-related items. In fact, more than two million men and women serve today in the active military forces, and roughly one-third of the Department of Defense budget is spent directly on these personnel: on recruiting, training, and transporting them; on providing for their housing, food, and medical care; and so on. Personnel costs in the past two decades have been influenced by the end of military conscription in 1973. Introduction of the All-Volunteer Force increased personnel

costs in two ways: the need to induce sufficient numbers of young men and women to volunteer for military service led to a substantial increase in basic pay and related expenditures; and there was a gradual increase in various cost elements, as first-term personnel were replaced by more senior members. Because military careers span 20 or more years, the transition to a mature All-Volunteer Force is still under way, and future changes in the experience structures of the enlisted forces may continue to increase the cost in coming years. [Ref. 17: pp. 1-2]

These concerns indicate the urgency of searching for a means of reducing personnel cost increases without causing an unacceptable reduction in wartime readiness. One possible answer is to substitute capital for labor wherever economically feasible. [Ref. 2: p. 277] In addition to broad allocation decisions dealing with capital and labor, there are equally important questions in the allocation of resources within these broad categories. In searching for a solution to this problem, the military/civilian mix of the force has been discussed and the argument has been made by many in Congress and DoD that civilians should be substituted for military personnel wherever possible because this is seen as a means of maintaining military force levels in a zero-draft environment and because they are said to be less costly. This argument, of course, recognizes that certain billets must be filled by a member of the military because of the reasons

mentioned in the previous section, such as law, training, security, discipline, rotation, combat readiness or the need for a military background to successfully perform assigned duties that are not subject to civilian substitution. [Ref. 16: p. 1] There are also cases where a job is filled by a military incumbent even though a civilian could do that job at least cost without violating the requirements mentioned above. This is necessary to meet the military mission of DoD. For example, some maintenance jobs in the Navy could be done less expensively in peacetime by civilians. However, there is a wartime requirement to deploy the entire maintenance activity to a combat zone. [Ref. 8: p. 12] Thus, the jobs must be filled by military personnel.

Although "least cost" is an implied criterion in the guidance concerning military-civilian determinations, cost probably was not a primary consideration when the military-civilian determination policy was first developed. Civilians were placed in all positions not requiring military incumbency because of the DoD policy that "civilians shall be used in all positions which do not require military incumbents" for reasons mentioned above [Ref. 11: p. 27]⁴. Planners simply assumed that civilians were less expensive, referring to

⁴Relative cost was not a criterion for determining which positions to civilianize. As a result, no consistent method was applied to compare the cost of military and civilian manpower resources capable of performing equivalent missions during the period of civilian substitution programs.

factors, such as the lower turnover rates of civilians [Ref. 2: p. 291], mentioned in the previous section. Another reason, leaded planners to the assumption that civilians were less expensive, was the misperception that the training and retirement costs associated with military personnel are generally well recognized, and the unfunded retirement liability and training costs associated with direct hires are less recognized [Ref. 2: p. 300]. Defense manpower planners were also affected on conversion decisions by the fact that military personnel generate more secondary support requirements than do civilians; for example most military individuals are clothed, housed, fed, trained, and provided medical treatment by DoD while this is generally not the case with civilians [Ref. 8: p. 6]. Thus, a military person generates a requirement for some fractional part of another person to maintain base housing, operate hospitals and schools, and perform other necessary support functions [Ref. 6: p. 75]. The support "tail" describes the number of these types of positions required to provide support for military personnel. GAO conducted a case study at the Naval Weapons Support Center, Crane, Indiana. Only 23 of the 68 military personnel at the site were doing center-related work or were working for other military activities. The remaining 45, plus 10 civilians, were providing support services for the military complement, such as food and housekeeping, recreation, commissary and exchange stores, and health care. [Ref. 7: p.

21] Delaune says the analyses revealed that the support "tail" ran as high as 36-40 percent of the total force [Ref. 3: p. 26]. Because of this support "tail" associated with military labor, the substitution of one civilian position for one military position would allow for the elimination of a small portion of another military position, thereby creating a net manpower and financial saving [Ref. 11: pp. 26-27]. While the figures will vary among the Services, a study by the Central All-Volunteer Force Task Force, known as the Moot Report, indicates that the net manpower saving will be over 15 percent, if civilians are substituted for military personnel [Ref. 13: p. 7]. On the other hand, there would be some offset to this saving to provide administrative support to newly employed civilians.

Another factor examined in the early studies was the ratio of substitution. Morthole, in his study for the Air Force, emphasized that the Air Force relies on a very high specialization of tasks, while the use of civilians permits an increased combination of tasks. Therefore, fewer civilians can be used to accomplish a particular task. [Ref. 4: p. 8] A draft study by the Office of The Secretary of Defense in 1964-65 proposed that the appropriate ratio of positions was about 0.85 civilian to 1.0 military. Delaune, citing the Army's civilianization program, gives the replacement ratio of nine civilians to every ten military replaced [Ref. 3: p. 24] A discussion of the civilian/military substitution ratio

in a Bureau of Naval Personnel study of the Training Deviceman (TD) rating shows substitution ratios ashore ranging from 0.6 to .82 (that is, 6 to 8.2 civilians would replace 10 military) [Ref. 6: p. 77]. The estimates derived in Albro's analysis were based on a 1.0 civilian to 1.1 military overall ratio. All these assumptions were based on the belief that military incumbents spend a significant proportion of the normal workweek on military-related duties not directly associated with their immediate position assignments (for example, drill, ceremonies, range-firing, police of barracks, police of the base, guard duty, and similar chores). Thus, man-hour availability is greater for the civilian employee in comparable positions, and civilian incumbents would, presumably, be more productive in the position, therefore justifying something less than a one-to-one ratio of substitution. [Ref. 5: p. 24] On the other hand, Albro made a counterargument to this assumption that military incumbents do normally spend a full workweek at their primary position with military-related duties being accomplished by extending the workweek beyond 40 hours [Ref. 1: p. I-5-8].

Thus, a logical starting point is to determine the costs associated with the two classes of personnel, specifically their magnitude and how they are broken down by expenditure category, government funding agency, and the time phasing of their incurrence. While costs such as direct pay, allowances, and fringe benefits are easily calculated, other components

of the total cost of personnel--such as the training required to fill a billet, the cost of support, and the appropriate attribution of military retirement costs--are not [Ref. 12: p. 21]. After estimating current costs, we should determine how they are likely to change in the future; while one class of personnel may at present appear to be less costly for filling a particular billet, a policy action that would attempt to take advantage of this situation could have effects that would significantly reduce or eliminate the intended saving [Ref. 4: pp. 29-30]. Planners should also consider the wartime conditions. Civilians were able to engage in some forms of combat in Vietnam; and in comparison to military personnel who were doing the same things, they were paid more. For example, U.S. civilians piloting helicopters on resupply and leaflet dropping missions in a combat environment were paid a base salary three or four times the pay of warrant officers performing exactly the same jobs at the same time and in the same place. U.S. civilian employees working in Vietnam--naturally, in circumstances remote from all but the most exceptional war danger--received a 25 percent salary differential for service in a combat zone, although they had, of course, no combat role. [Ref. 5: pp. 26-27] Until these questions are answered, we cannot be sure whether a civilianization policy would result in a net cost or saving.

1. Comparing the Present Cost of Military and Civilians

The total identifiable current and expected future costs to the federal government are seen as the appropriate measures for the required analysis. Budget costs are too narrow to fully capture the impact of employing one rather than the other class of personnel, because dollar costs are incurred by several recipients of federal funds over many budget years [Ref. 2: p. 296-298].⁵ Therefore, Beltramo says that "costs budgeted by an agency for a particular year do not completely represent the government's liability for actions taken in that year." For example, educational benefits and dependency and indemnity compensation for military personnel are paid by the Veterans Administration, and military retirement benefits are paid by the Department of Defense. Funding for these items--educational benefits, dependency and indemnity compensation, and retirement benefits--included in the current budget is the result of past policies. The effect of current policies on these budget items will be reflected in future budgets. The government's retirement contribution for civilians is an example of misrepresentation of current costs. This retirement contribution leaves a significant unfunded liability, amounts greater than those provided in the

⁵However, they are useful, first, for establishing a benchmark for determining the cost implications of a large-scale substitution of one type of personnel for another; and second, for comparing the trends over time in the costs of these different types of personnel [Ref. 2: p. 296].

current budget, and must be added to some future budget to cover the government's accrued liability [Ref. 2: pp. 297-298].

Although present value calculations are often used to compare the relative cost of the two classes of personnel over time, they hide many of the factors discussed above--including which agency pays how much and when. At the same time, such a comparison may be sensitive to the discount rate, which is often arbitrarily chosen. Therefore, a more detailed comparison made on a case-by-case basis provides the analyst with valuable insights. [Ref. 16: p. 3]

Table I demonstrates the cost impact over time and across the federal bureaucracy of a decision to fill a hypothetical billet with either a member of the military or a civilian. As Beltramo points out, the costs in the example are for illustrative purposes only, and there should be no inference that they include all appropriate elements or that the amounts expressed are completely accurate. The E-6/GS-7 comparison is also not necessarily a relevant one, as the proper trade-off between military rank and civil service grade must be determined on a billet-by-billet basis. It should also be noted that to gain the full understanding of this comparison, an assumption must be made regarding the number of years over which the costs will be incurred.

TABLE I

ANNUAL COST OF MILITARY/CIVILIAN PERSONNEL

Funding Agency	Annual Costs Incurred During <u>Incumbency (in \$)</u>		Annual Costs Incurred After <u>Termination (in \$)</u>	
	Air Force E-6	Civilian GS-7	Air Force E-6	Civilian GS-7
<u>AIR FORCE</u>				
Base Pay	9,450	10,53		
Overtime & Holiday	0	328		
Other Costs ¹	141	375		
Support ²	841	203	400	
Quarters	762	0		
Training	500 ³	0 ⁴		
Retirement	0	737		
TOTAL	11,694	12,175	400	
<u>DoD</u>				
Retirement			4,000 ⁵	
<u>Veterans</u>				
<u>Administration</u>				
Educational Benefits			2,165	
Dependency & Indemnity Comp.			100	
<u>SPECIAL CONGRESSIONAL</u>				
<u>FUNDING</u>				
Unfunded Retirement Liability ⁵				750
TOTAL			6,265	750

SOURCE: M. N. Beltramo, Considering the Cost of DoD Personnel, Rand Corporation, p. 4.

¹PCS, life and health insurance, terminal leave, etc.

²Medical O&M, recruiting, fringe benefits for civilians.

³Cost of technical training amortized over the years.

⁴Assumes that civilians receive no job training and does not amortize specialty training received over later career.

⁵50 percent of base pay X 88 percent probability person will reach retirement.

A significant point that is indicated by Beltramo in this comparison is that the Air Force is required to pay from its current budget the entire present and future cost, except the unfunded liability portion of retirement, associated with employing a civilian, but pays only the current costs incurred by employing a uniformed personnel. Costs that will be incurred by a military person after he/she leaves the service are borne almost entirely by other agencies.

Given this perspective, it is reasonable to anticipate institutional conflict between Congress, DoD, and the Services, since acting in a manner that is less expensive (in terms of the total picture) may prove to be more costly to the Services. Thus, the provision of incentives to stimulate cooperation on the part of the Services should be considered. [Ref. 16: p. 5]

The components of personnel costs have to be examined to determine how they should be treated, so that comparisons of military and civilian personnel (such as the one in Table I) can be meaningful. The following subsection examines the former studies in terms of the elements of personnel costs in an attempt to provide a methodology for comparing the cost of personnel for various decision-related purposes.

2. Cost Measures

Cost measures are designed for policy analyses that detail how a particular DoD policy would affect the desired size and structure of active and civilian personnel inventories. The policy action might be a weapons system deployment or a plan to replace a work center's active duty personnel with civilians. The analysis would project how such an action would alter various resource needs, including changes in personnel inventory size and structure. Then the cost measures could be used to translate those manpower changes into their cost implications. [Ref. 18: p. 5]

In the Department of Defense, skilled manpower is both an input to and an output of defense operations. Thus, we will examine cost factors in the separate categories of direct and indirect labor costs.

a. Direct Labor Costs

Direct costs are payments triggered by using personnel in a productive activity. [Ref. 18: p. 6] There is disagreement about what constitutes it. Part of the difficulty arises from the complexities of the military pay system, which--in addition to cash payments--includes an array of benefits, some of which are in-kind, some deferred, and others conditional. And the civilian compensation system, while more straightforward, has its own argumentative properties. [Ref. 9: pp. 43-44] Because of sharp differences in the

categorization of costs of these two types of labor, we will cover the direct cost elements in two different subsections.

(1) Direct Cost of Military Personnel. Palmer, in his Rand study of the "Incremental Costs of Military and Civilian Manpower in the Military Services," defines direct costs as "entitlements which are paid to military personnel based on their continuing service." He includes the following items:

- Basic pay, which all members receive at rates that vary by grade and length of service.
- Allowances for subsistence, which most members receive as cash at one of three daily rates but some receive subsistence in kind.
- Allowance for quarters, which nearly half the force receive as a full cash allowance based on their dependency status, and another third receives as a partial cash allowance or a cash supplement for substandard housing, remaining personnel receive quarters in kind.
- Assignment-related allowances which are paid only to selected force members depending on their assignments. This includes special and incentive pays, variable housing allowance, which active force members receive to help cover household expenses that vary by location, and station allowances/family separation allowances, which is paid to members stationed overseas.
- FICA tax on the wages paid to military personnel. However, unlike most civilian employers, DoD does not have to pay FICA tax on subsistence and quarters allowances for military personnel. [Ref. 18: pp. 15-29]

Subsistence and quarters allowances would be taxable if they were paid by a civilian employer. Therefore, adding military personnel to DoD workforce could reduce these federal tax

revenues, and such a revenue loss would be an additional federal financing cost for military personnel. Rhode recommends that to obtain the cost to the government, the foregone tax on benefits be added to the billet costs [Ref. 19: p. 12]. Adjustments for nontaxable allowances also apply to special and incentive pay when they are relevant to a policy under analysis.

(2) Direct Cost of Civilian Personnel. This subsection reviews the direct costs of filling a DoD position using a member of a civil service paygrade⁶. Palmer's direct cost elements consist of the following:

- Base pay, which is regular salaries or wages.
- Other pays, which are primarily overtime payments available to all schedules except the Senior Executive Service (SES), holiday premium, which is available to all schedules except SES, but rarely used, and duty-related pay available to all schedules, but used to different degrees by the Services.
- Benefits, which includes life insurance, health benefits, worker's compensation, employer's FICA tax, and pension benefits. [Ref. 18: pp. 30-36]

b. Indirect Labor Costs

Indirect costs arise in DoD activities that supply or support manpower used in other operations. Examples are costs for manpower recruitment, training, relocation, and

⁶Filling a position means having someone assigned to that position, recognizing that the assigned individual will be absent from the position occasionally due to sick leave, holidays, etc.

medical care. There is little agreement on the appropriate costs for the military and civilian employees and even less on what indirect costs should be included and how they should be allocated. And, even when agreement is reached on these issues, there remains the question of how to link military and civilian grades⁷. It is important to note that, unlike direct costs, indirect support costs do not vary proportionately with changes in employment levels. In other words, the elimination of a small number of positions on a base would have little impact on the cost of providing base services. Indirect costs should therefore be included in cost comparisons only for major changes in employment. [Ref. 9: pp. 43-46]

Indirect costs may be divided into two categories, those generated per person-year and those triggered by events that occur irregularly during a career.

⁷The effects on costs of substituting one type of labor for another depends on the grade levels of the respective employees. One of the methods for establishing equivalent military and civilian grades uses a point-count system to compare the content of both similar and dissimilar jobs. Each job is evaluated by the problem-solving skills required and by the degree of accountability. The point counts are used to identify civil service grade levels whose median job content is above and below the median job content of the military grade being evaluated, thus locating the military grade in relation to two civilian grades. The job content of a military grade is then assigned to a point on a percentage scale between the two civil service grades with the next lower and next higher median job content. [Ref. 9: pp. 46-47]

(1) Indirect Costs Incurred Per Person-Year Basis.

Palmer uses four types of indirect costs in his study:

- Morale, welfare, and recreation (MWR); including base exchanges, other resale operations, open mess operations, and clubs and facilities for military and civilian personnel.
- Commissary benefits, available to reservists and military retirees as well as active duty personnel.
- Medical and dental care, supports military personnel and their families in two different programs. CHAMPUS reimburses most costs of care for treatment obtained from civilian providers by military dependents, military retirees and their dependents, and military survivor families; the Military Treatment Facility (MTF) system supplies care directly to active duty members, and is available to CHAMPUS eligibles on a space-available basis.
- Base operating support (BOS) other than MWR and housing, generally covers base administration, utilities, other base services (e.g., fire protection and physical security), and other engineering (e.g., waste disposal) activities that might vary with the number of personnel assigned to a location, BOS also includes some items that appear more programmatic in nature (such as equipment and real property maintenance. [Ref. 18: pp. 40-50]

Since civilian personnel are not entitled to use commissaries, and DoD costs for civilian health care were included in the direct cost category, commissary usage and medical and dental care categories pertain only to military personnel.

(2) Indirect Costs Triggered by Events. These costs are triggered by changes in personnel flows through the military manpower inventory or the civil service workforce. Palmer associates these costs with entry, midcareer, and exit events.

Costs associated with entry to the DoD workforce are generally confined to military personnel only. These costs include the following:

- Initial uniform and clothing allowances.
- Permanent change of station moves.
- Recruitment and examining costs.
- Educational assistance includes support for four types of educational benefits for military personnel in addition to regular military training. Educational assistance consists of the Veterans Education Assistance Program, the new GI Bill, the kicker benefits⁸, and off-duty and voluntary education.
- Basic and initial skill training.
- Enlistment bonuses which are available only to enlisted accessions who enter selected occupations. [Ref. 18: pp. 55-65]

Cost-incurring midcareer events consist of professional development education and skill progression training⁹, permanent change of station (PCS) costs for

⁸The kicker benefit is an additional educational benefit for nonprior service enlistees with high school diplomas who obligate for specified lengths of service and enlist in designated military specialties.

⁹All officers in grades O-3 through O-6 are eligible for professional development education and skill progression training. All enlistees in grades E-4 through E-7 are eligible for skill progression training. Civilian personnel also receive DoD-supported training and education. Some civilians attend the same training courses (most commonly skill courses) as military personnel. In addition, some others receive training and education in DoD-related job skills (such as computer operations) at DoD expense.

rotational and operational moves, and continuation and reenlistment bonuses¹⁰ [Ref. 18: pp. 65-69].

Exit-related costs fall into the following categories:

- Compensation paid in the year of separation, such as death gratuities, lump-sum terminal leave pay, severance pay, and permanent change of station separation costs.
- Payments to the Department of Labor to cover unemployment compensation for current separations.¹¹
- Obligations for retirement program benefits. [Ref. 18: pp. 70-75]

3. Findings

Although they were not developed for the same purpose, one would expect a fair amount of consistency regarding the treatment of costs by different studies. However, this is not the case. A review of the cost elements treated in various studies reveals inconsistencies: The same costs are sometimes treated differently and one study may exclude a cost that another attempts to include. For example, as Beltramo points out, one report uses DoD standard basic rates for pay and

¹⁰Bonuses at retention are available only to military personnel in selected occupations.

¹¹The Office of the Secretary of Defense Comptroller's Office presumes that unemployment compensation would be triggered only by separations of civilians and enlisted personnel in grades E-1 through E-5. No cost is attributed to officer losses or to enlisted transfers to officer status, losses to death or disability, reenlistment, retirement, or desertions.

allowance (for military personnel) while another recreates a similar rate from its component elements; or one study does not treat retirement probability as a function of each rank while another does; or a particular study does not include the cost of specialty training while others do; or some studies do not include dependency and indemnity compensation, unemployment compensation, educational benefits, and income tax adjustments while still others do.

Further research is required before an acceptable determination can be made as to which elements should be included in a correct cost model. However, the previous subsection, explaining appropriate cost measures, which is based on a recent Rand study, may be a good example; and a few tentative comments regarding the existing models will be made to provide a perspective as to what may be an appropriate approach.

If we are to seek to minimize the cost, we must know what the cost of the possible alternatives are. That is, for an employee to reach the appropriate level he or she must first be recruited, trained (formal and/or on-the-job training), paid, and given administrative and logistical support. Each of these implies a cost to the government, and it is the analyst's task to determine how they should be treated, since the appropriate amounts are often not obvious.

[Ref. 16: p. 7]

Although it has not been explicitly stated, the cost of each type of personnel is driven by the policies that are implemented for it. Regardless of the current status of costs for military and civilian personnel, the decisionmaking authorities have some latitude for significantly altering these expenditures. Previous studies have looked at the state of personnel cost without giving enough consideration to how it was reached and why. As Beltramo indicated, such an analysis might provide an understanding of how costs might be effectively reduced even without resorting to civilianization. [Ref. 16: p. 8]

In short, the issue of minimizing the cost for required personnel services is a complex one. a sound analytical foundation should be provided before any policy action is taken so that the probability of counterproductive results is minimized. In this effort, a first step might be to determine the incremental cost of each class of employee for the specialty being considered for civilianization [Ref. 10: p. 10]. The next step might be to determine what future trends are likely that should affect the decision and what impacts a civilianization decision would have on costs [Ref. 4: pp. 29-30]. Reliable policy recommendations may be made only after this has been done.

C. OTHER FACTORS BEING CONSIDERED IN CIVILIANIZATION

The previous sections reviewed the concept of conversions, conversion actions and reports. The sections served to provide a background to conversion actions overall and to introduce military essentiality for some positions and cost that must be considered when conversion actions are being studied. The conversion of military positions to civilian positions tends to develop only one view of the entire effort that may be involved, in particular the factor of cost. However, even cost factors were not considered in early conversions, as mentioned in the previous section; and civilians were generally substituted for military personnel when the position was not required to be filled by uniformed personnel. Certain factors are difficult to evaluate and can support having either a military or civilian occupant in a job, while others may more clearly differentiate the advantage of having one over another. Consequently, some factors affecting military to civilian conversions are discussed in this section.

1. Heritage

The heritage of this country has always stood for civilian control of the military forces, so that the military should never be in control of the nation. Therefore, converting a military position to a civilian position is in that view the proper goal to achieve. The military is now dependent upon scientific and technological progress in the

research and development community outside the military, and, in fact, outside the government. One recalls the powerful conflict within the government after World War II concerning whether the military or civilian institution should exercise principal control over nuclear activities in the United States. The final outcome was the creation of a civilian agency, the Atomic Energy Commission. The same outcome resulted several years later when a similar contest erupted over who was going to run U.S. activities in space. Again, it was decided that a civilian activity, the National Aeronautics and Space Agency, would conduct the program, and military elements, particularly the Air Force, were linked in subordinate roles. Another central government contest resulted over the potential control of the new national intelligence activity; and again, a civilian organization, the Central Intelligence Agency was established. The military won only one of these conflicts, and it was a relatively minor one. During World War II and immediately after the war, there was considerable debate about the idea that one or more scientists should sit as members of the Joint Chiefs of Staff (JCS). Eventually, the military won. No provision for a civilian of any kind on JCS was made. After the war, a new superstructure, intended to increase civilian control, was placed inside the Department of Defense. The military departments lost status to DoD. Over the years, that trend has been confirmed and sustained, as the authority and status of the top layers of

the military departments have been eroded by the largely civilian layer of the Office of the Secretary of Defense. [Ref. 5: pp. 58-59] It goes even further: now people are asking whether the military needs uniformed strategists, at all. The data on the decline in status of the Naval War College, for example, and on the seeming irrelevance of that institution's curriculum to the promotion of the Navy's flag officers indicates that, either by conscious design or by default, the naval high command has answered this question in the negative. These strategists obtain their own qualifying education at the nation's top universities and colleges and then work as consultants to certain of the various private firms more popularly known as "think tanks". This "corps of strategists" are essentially hired help. [Ref. 20: p. 55]

This idea pervades the thoughts of the common citizen so strongly that it is often difficult to convince the American people that the freedom they have can only be exercised because the military protects that way of life. [Ref. 4: pp. 28-29] Maintaining civilian control of the military is a principle which should not be violated; but, on the other hand, this perception should not affect objectivity in conversion decisions. There is also the unfortunate belief among some that civilians should run national programs in place of their military counterparts because civilians possess superior abilities.

This understanding raises the question whether military society is converging with civilian society or becoming more unlike American society in general. Wermuth, for example, citing the work of Moskos, concludes that;

the eventual result will not be pervasive homogeneity one way or the other, but a pluralistic military in which divergence would be most marked in combat units, selected other units, and higher operational command headquarters, where the traditional military ethos would be cultivated. On the other hand, convergence would be characteristic of military units and enterprises concerned with administrative, educational, medical, logistical, technical, and other areas not uniquely military--areas which would be allowed to become, and which are becoming more civilianized. [Ref. 5: p. 23]

2. Availability of Qualified Personnel

It may be difficult to hire civilians for many of the military positions identified for substitution. Civilian labor market problems may very well limit the hiring of civilians in certain skills and at some geographic locations. The magnitude of this problem can only be determined by bringing field activities into the planning of real-life civilian substitution programs [Ref. 13: p. 56], and by surveying the civilian labor market situation to determine whether it is "tight" or not for the particular fields and geographic areas concerned [Ref. 3: p. 30].

On the other hand, as the supply of high school graduates decreases, the level of competition among industry, academic institutions, and the uniformed services will most likely increase. Industry will probably achieve its hiring

goals, because they can pay higher wage rate to attract qualified labor, whereas military pay is tightly controlled by the Congress. Inter-and intra-service competition will also increase as a result of such changes as advancing technology in Army ground and tank units (moving from field guns to multiple launcher rocket systems), the transition from guns to missiles in the surface Navy, as well as the introduction of high-speed hovercraft and gas turbine-driven ships. These new systems will all compete with the Air Force strategic missile programs for trainable recruits. The recruiting environment, therefore, does not look promising for any employer, especially the military, in the years ahead. [Ref. 6: pp. 7-8]

Several new initiatives could help achieve recruiting objectives, such as, DoD-sponsored legislation to lift statutory restrictions on women serving in combat and changes in enlistment standards that will increase the pool of eligible young people.

3. Environment

The environment may present an advantage to either military or civilian personnel. For example, civilian maintenance personnel at the depot level receive items for repair for many reasons, aside from routine maintenance action, which, in turn, provides exposure to a multitude of field problems. They have more time available to complete

their work, but they do not necessarily see the results of their work in the field. At the depot level, civilian maintenance personnel may also fail to see the vital importance of their actions which may also yield lower quality products.

On the other hand, the military maintenance person who has seen the results of his or her work under simulated or real combat conditions knows the importance of this work and observes the end results every time an aircraft returns. Military personnel receive combat-oriented training and experience under simulated and real combat pressures that the civilian does not normally receive. The military person spends more time at the squadron level and does not have the same amount of time a civilian will at the depot level, but he or she has the experience of the on-site operational pressure. Thus, environment is an important factor to consider in conversion actions, not only because of the job conditions where the person works, but also because each person has a different environmental/operational background, and may be in favor of either civilian or military personnel. [Ref. 4: p. 30]

4. Skill Variety

Clearly, there has been no one theoretical explanation of why and how task attributes affect workers. The way jobs influence motivation could be partially explained by several

existing theories, including Maslow's need hierarchy, Herzberg's two-factor theory, and expectancy theory. To integrate and synthesize much of the literature on this topic, a model was proposed by Hackman and Oldham that explains how jobs influence attitudes and behavior. It is called the "job characteristics model" and is probably the most researched explanation of job enrichment. According to Hackman and Oldham, skill variety¹² is part of the core job dimension leading to meaningful work and, therefore, work motivation. In turn, this becomes job enrichment, as described by them. [Ref. 21: p. 589]

When we consider the types of labor employed by DoD, military personnel appear to have a disadvantage with specialized training that leads to positions without the skill variety that the civilian field appears to have. Morthole indicates two additional consequences of specialized training as a result of technological advances. First, civilians may not be allowed to perform the maintenance functions because of its specialized nature; second, military personnel may not be able to perform the maintenance at the higher levels of maintenance due to their lack of training across the spectrum of requirements that civilians may have received. The military, however, offers a broad experience background through job changes due to rotation requirements. [Ref. 4: pp.

¹²The number of different activities, skills, and talents the job requires.

30-31] Therefore, this factor is considered neither an advantage nor a disadvantage to civilian conversions, but it should definitely be considered before any policy decision is made.

5. Equity

Equity theory is based on the thesis that a major factor in job motivation, performance, and satisfaction is the individual's evaluation of the equity or fairness of the reward received. Equity can be defined as a ratio between the individual's job inputs (such as effort or skill) and the job rewards (such as pay or promotion) compared with the rewards others are receiving for similar job inputs. Equity theory holds that an individual's motivation, performance, and satisfaction depend on his or her subjective evaluation of the relationships between his or her effort/reward ratio and effort/reward ratio of others in similar situations. Most discussion and research on equity theory center on money as the reward considered most significant in the workplace. People compare what they are being paid for their efforts with what others in similar situations are receiving. [Ref. 22: pp. 448-449] In the Armed Forces, the civilian workforce is typically considered a support function and the military is considered to be in the combat arena and available for national defense.

The total of repeated combat exposures over a typical career for a military member would tend, on the average, to fall into the proportions shown in Table II.

TABLE II
TYPICAL MILITARY CAREER
(EXTENDS OVER 22 YEARS AND EXPERIENCES 9 RELOCATIONS)

Military Situation	Percent of Career Military Experience
Combat Zone	9.0
Family Separation, Unaccompanied Tours (Excludes combat, sea duty, and field duty)	2.8
Overseas (With family, excluding field duty)	14.0
Field (or sea) Duty	10.4
Other, Overwhelmingly in CONUS	<u>63.8</u>
TOTAL	100.0

SOURCE: A. L. Wermuth, An Armored Convertible: Shuffling Soldiers and Civilians in the Military Establishment, Strategic Studies Institute U.S. Army War College, Carlisle Barracks, Pennsylvania, October 1979, p. 20.

The model establishes the allocation of various principal conditions that occur in the average of all current military careers, and shows that there is some increment of disadvantage suffered by the average soldier (and sailor or airman) in comparison with the average citizen in civilian life, including civilians who work in the military establishment.

A number of positive conditions equal and balance out certain negative conditions, but negative conditions are not balanced out completely. For example, as Wermuth observes, the following liabilities in military service cannot be adequately balanced out by citing positive benefits: combat exposure, frequently directed moves, directed family separations, sea duty, field duty, unlimited and irregular workweek, exposure to disease and poor sanitary conditions, isolated posts, loss of earned leave (for officer only), no right to quit, and liability to command at sea and in field equivalents. One or two of these factors seem possibly contradictory. For example, the last item (command) is considered in some contexts to be a positive opportunity, rather than a negative condition. However, it is apparent that the great responsibility of a commander at sea or in the field, such as command of a nuclear aircraft carrier, involves billions of dollars and hundreds of men, but no additional compensation is provided to the incumbent of the top job. Only the five factors listed below are subject to some kind of quantification, however partial:

combat exposure (number of days)¹³; frequently directed moves, including overseas; directed family separation; unlimited and irregular overtime without pay. [Ref. 5: pp. 20-21] In terms of duty time and pay, military personnel are on call for 24 hours a day for the same pay; although they are not called upon to work very often, while civilian personnel will receive overtime pay for work performed outside the normal duty hours. [Ref. 4: p. 31] Also, adding a larger number of civilians at the journeyman, technician, or laborer level changes the focus of this problem to another issue, such as civilian grooming, pay differential, union activism, civilian attire, illegal alcohol usage, and relaxed work habits [Ref. 6: p. 81]. In this case, when a military individual feels that inequity exists, a state of tension develops. People try to resolve this tension by appropriately adjusting their behavior. A worker who perceives that he or she is being underpaid, for example, may try to reduce the inequity by exerting less effort.

¹³The United States has never paid compensation to its military members for participation in combat, but has provided amounts for being liable to exposure to combat. Thus, every soldier in the U.S. forces in Vietnam, regardless of rank or assignment, from E-1 to O-10, whether in a combat unit or an administrative unit, received "hostile fire pay" of \$65 a month--a token amount that perhaps overcompensated those serving at negligible risk and undercompensated those serving in front-line combat units. All U.S. military persons in Vietnam with dependents left at home also received a separation allowance of \$30 per month, and exemption of \$500 of income from federal income tax, for each month served in Vietnam. [Ref. 5: p. 22]

The tension, if it exists, is one factor that the unit manager must accept and try to resolve. Perceived inequities between personnel become dissatisfiers on Herzberg's motivation scale. Thus, inequities perceived by unit personnel become disadvantages which must be resolved by the unit commander; but, when equity is achieved, it is not an advantage that can be utilized by the unit. Although there is no direct advantage or disadvantage to either civilian or military personnel, the lack of equity does affect the unit; therefore, it may become a disadvantage for military to civilian conversions. [Ref. 4: p. 32]

6. Performance Appraisals

Such appraisals can be defined as "a systematic review of an individual employee's performance on the job which is used to evaluate the effectiveness of his or her work." [Ref. 21: p. 298] Vroom's expectancy theory of work motivation says that individuals will perform at a certain performance level if the positive outcomes associated with that performance level outweigh the negative outcomes. [Ref. 22: p. 446] Intense dissatisfaction and feelings of unfair treatment can develop from differing sets of comparisons. As a result, personnel working in the same office or at essentially the same job will desire to have a performance appraisal system consistent with their workmates. But, this is not the case in work areas employing both civilian and military personnel,

because performance appraisals in the military tend to be inflated and, at any rate, it is different than the civilian appraisal system¹⁴. Consequently, differences can result which may ultimately lead to anxiety and resistance by one or the other with regard to the performance appraisal. Performance appraisals can affect the worker at any time, but the impact may have a greater effect on the unit when military and civilian personnel are working side by side and receiving appraisals which are different or are perceived to be different for essentially the same job performance. [Ref. 4: pp. 32-33] It is hard to predict whether it is an advantage or disadvantage to a particular conversion action, but it probably has a negative effect on morale of the unit.

7. Morale

Blum and Naylor define morale as follows:

The possession of a feeling, on the part of the employee, of being accepted and belonging to a group of employees through adherence to common goals and confidence in the desirability of these goals" [Ref. 21: p. 379].

¹⁴Officers and enlisted men are carefully rated at least once each year on extensive forms and in elaborate systems of evaluation of performance, personality, traits, and other factors. On the rating form for the civilian employee, however, there are three words: outstanding, satisfactory, and unsatisfactory. If the rater checks either outstanding or unsatisfactory, the rater must write out an additional explanation to justify the rating. If he checks satisfactory, however, he does not have to add or explain anything. Thus, an entire year's performance by a civilian employee can be totally evaluated by a mere check mark on a single sheet of paper. [Ref. 5: pp. 98-99]

This definition emphasizes feeling accepted by the work group; sharing common goals; and believing that these goals are desirable. Personnel attitudes, turnover, absenteeism, tardiness, and grievances are all measures of job satisfaction that refer to the extent to which the organization satisfies the need of the employees. A downturn in attitude, as a result of inequities perceived by either civilian or military personnel, will result in reduced morale and a corresponding reduced level of performance and readiness by the unit. Intermingling of military and civilian personnel creates the conditions for personnel of two very different groups to compare their backgrounds and current positions. The resulting comparisons of job terms (such as those in job descriptions, working conditions, or the inequality in pay for similar jobs) causes the difficulties that need to be considered with conversion projects. A perceived lack of equity between two groups of personnel is a cause of reduced morale, which results in individual decisions to eliminate the inequity. The easiest way for a young soldier to eliminate the problem is by leaving. Thus, the retention rate may go down. This assumption is supported by the observation made by Morthole. During the first phase of Mix Fix, an early conversion action taken by the Air Force, there was a noticeably adverse impact on airman morale and first-term airman retention. [Ref. 4: p. 34] Therefore, reduced morale may be a disadvantage in the military to civilian conversion.

On the other hand, conversion of some positions, such as the food service attendant functions, berthing compartment duty, or passageway cleaning on ships, which require relatively unskilled labor (and since many of the personnel are assigned to these undesired jobs temporarily) may have a positive effect on morale [Ref. 6: pp. 13-14].

8. Civilian Personnel Management

Wermuth (citing the Defense Manpower Commission) notes that several critical differences exist between the personnel systems for soldiers and civilians, resulting from differences in organic law, customs, traditions, roles, and underlying concepts. The Defense Manpower Commission lists six principal differences as follows:

<u>Army Civilian Personnel System</u>	<u>Army Military Personnel System</u>
. Open career system with entry possible at any level.	. Closed career system with entry possible only at bottom levels.
. Rank vested in the job.	. Rank vested in the person.
. Promotion competition from within or outside the Service.	. Promotion competition exclusively from within.
. Contractual relationship between worker and employer.	. Command relationship between worker and employer.
. Pay package similar to private sector, generally limited to base pay and occasional over-time.	. Pay package more comprehensive, including housing, subsistence, medical care, commissary and exchange privileges.
. Force heavily unionized.	. Minimum union impact.

The military system can be characterized as closed, person-oriented, and centralized, while the system governing the management of civilians is open, job-oriented, and decentralized. Military people usually enter at the bottom of the grade structure; they are trained and then, as they progress through the system in a sequence of career-broadening assignments, achieve appropriate rank and pay raises. Civilians, on the other hand, move in and out of the civil service, with grade and pay granted in the job rather than the individual. Partly because of these features, the military personnel system receives more attention; long-range centralized planning is necessary to ensure that people with the right skills and experience are available when they are needed. Since civilians can be hired and enter the system in any job at any level, long-term planning that includes training programs and career-broadening assignments are not considered as important. [Ref. 9: pp. 15-17]

In listing, above, the relationship between worker and employer, different contexts may cause difficulty with the term "employer." Who is the civilian's employer--the federal civil service? And who is the soldier's employer--his unit commander? There is a large sense in which the relationship evolving between both military and civilian employees and their employers is closer to a contractual nature than to command dynamics.

Pay package is also undergoing evolution, expanding its coverage in portions of the private sector to include medical and dental coverage, support for dependents, pension contributions, holiday and annual leave, working conditions, cost of living supplements, access to company stores, and other benefits. [Ref. 5: pp. 76-77]

The last item, above, on unions also needs amplification. Title VII of the Civil Service Reform Act permits the organization and representation of federal employees by a union, as well as their right to arbitrate grievances. The employees have the right to form, join, or assist a union, and they can bargain collectively or be represented by a union. Failure to bargain by either military management or the union is an unfair labor practice according to the law. However, negotiations are prohibited if the negotiations adversely affect the budget or degrade the mission, organization, security, discipline, or other significant areas. Strikes may be prohibited based on the premise that government employees provide essential services in the public interest. [Ref. 4: p. 35]

In any event, the six contrasts listed above certainly distinguish the two forms of federal employment from each other. Supervisors are required to follow sound management principles in their daily conduct and operations with civilian personnel. One of the specific limitations requires a supervisor to coordinate proposed decisions which affect the

civilian personnel with higher level supervisors and with the central civilian personnel office when required. This means increased coordination for military supervisors, which, in turn, creates an increased workload for them, and still may not be as effective as expected¹⁵. Without sound management, unions have the potential to create difficulties, and a strike could be damaging to the readiness of the Services. Especially, strikes by employees in smaller units in the field would have a more immediate effect on the unit's own mission, and would probably be covered by military personnel. While civilians can bargain for better terms and working conditions, the military member is bound by his oath and his service contract to follow official orders, and this would undoubtedly affect the attitude of military personnel who are prohibited by law from unionizing [Ref. 6: pp. 51-52]. Unions, through the possibility of strikes and the increased participation to negotiate terms, may be considered a disadvantage to conversion actions. [Ref. 4: p. 36]

Flexibility in assigning civilians may also be a problem to consider, although the civil service rules on the management of civilians do not constitute a significant obstacle. Furthermore, since the civilians under discussion are to be used in positions not affected by the military

¹⁵1964-1968 Civilianization Program did not achieve its full potential because of inadequate guidance and weaknesses in internal management controls [Ref. 7: p. 28].

rotation requirements, the need for their reassignment should be minimal [Ref. 13: p. 55].

9. Discipline

Disciplinary actions are handled in a different manner by the military and by civilians. The intent of civilian discipline is to attain and maintain a constructive working environment. In fact, this is also true for military personnel, but it is oriented towards the combat environment in order to prevent a breakdown of discipline that could have tragic results. With the civilian workforce, progressive discipline typically follows the steps of an oral warning, written warning, disciplinary layoff or demotion, or discharge. These steps are part of the grievance process in most collective bargaining agreements with civilians, but with the military, there is no union to assist the worker. In the military, violations of discipline are punishable by the Uniform Code of Military Justice (UCMJ). While the two systems basically have the same goal, the methods of punishment are not the same. As a result, discipline may not be equitable in the view of the civilian or the military person. [Ref. 4: p. 37] Thus, it needs to be considered before any effort at civilianization is made.

"In time of war", the UCMJ states, "persons serving with or accompanying an armed force in the field are subject to the Uniform Code of Military Justice." Subsequently, the

U.S. Supreme Court held unconstitutional the exercise of court-martial jurisdiction over civilians in time of peace or undeclared war and thus limited military jurisdiction over civilians in a subsequent UMCJ article, which states that "persons serving with, employed by, or accompanying the armed forces outside the United States or territories are subject to the code." [Ref. 6: pp. 29-30] Therefore, peacetime application of discipline for civilians must follow the procedures summarized above.

10. Legal Concerns

If injured while working aboard a ship, a civil service employee may file a claim against the government under the Federal Employees Compensation Act. This act defines and limits the recovery payment. An injured merchant seaman, on the other hand, can file suit directly against his employer, claiming that the ship was unseaworthy. There are no statutory limits to the amount of recovery in this instance. Legal defense against the charge of "failing to provide a seaworthy ship" would be difficult for the Navy because its ships do not, in most cases, meet the rules and requirements for ship construction as described by the American Bureau of Shipping and the U.S. Coast Guard. "Unseaworthiness" could be charged for such deficiencies as inadequate safety lighting, a missing guard rail, faulty machinery, or a fire hazard if contract mariners were injured.

Also, warships are granted certain sovereign immunity¹⁶ from the jurisdiction of other states by the Geneva Convention of 1958 because warships are owned and operated by a state and used on government non-commercial service. A warship, in addition to belonging to the naval forces of a state, bearing external markings, being under the command of a commissioned officer must also be manned by a crew that is under regular naval discipline. A vessel's status as a warship might be questionable if manned by a large enough number of contractor employees to be considered as not under military discipline.

Currently, the U.S. Government is not considered an employer, so military and civil service work spaces are exempt from the Occupational Safety and Health Act (OSHA) regulations and inspections. If, however, contractor employees were aboard Navy vessels or aircraft, the civilian contractor would be the actual employer and spaces could be inspected at a reasonable time. The primary concern with OSHA regulations is that any contract employee could complain about ventilation, heat, lighting, or safety violations, for example, and the Navy or the contractor would be subject to a violation or potential work stoppage. Habitability standards for merchant seamen and civil service mariners are governed by U.S. Maritime Administration Standard Specifications, U.S. Code Title 46,

¹⁶This immunity would include such things as U.S. control over persons on board, freedom from search and arrest, and exemption from foreign taxation.

and Military Sealift Command Instructions. Even the compromised habitability standards for old-type ships would be beyond active Navy fleet capability if large numbers of civilians were placed on board. Maritime standards are clearly too liberal and could not be implemented on warships. Negotiations with employees or contractors certainly would be required. [Ref. 6: pp. 35-38, 43-45]

11. Promotion Possibilities

The work situation, which can affect job motivation, consists of two categories: (1) the actions, policies, and culture of the organization as a whole; and (2) the immediate work environment. Personnel policies, such as wage scales and employee benefits (vacations, pensions, and the like), generally have little impact on individual performance. But these policies do affect the desire of employees to remain with or leave the organization and its ability to attract new employees. The reward system of the organization, on the other hand, guides the actions that generally have the greatest impact on the motivation and performance of individual employees. Salary increases, bonuses, and promotions can be strong motivators of individual performance. [Ref. 22: p.439] It is vitally important that personnel have the chance to progress through the expected means of advancement, otherwise the individuals will leave when they have their most productive years ahead of them [Ref. 4: p. 38]. The conversion

of spaces from military to civilian in the senior pay grades of a career field may reduce the promotion possibilities of military personnel in the lower grades and increase personnel turbulence. Another example, is the Navy's civilianization policy. The Navy devised a method to reflect the ratings (or occupations) of mission criticality, replacement costs, sea-tour length and reenlistment bonus levels. The result was a standardized ranking of ratings from low to high. Lower-ranked ratings were examined for possible civilianization, and most of them were in shore billets. Since most of the women in the Navy are assigned to these shore billets, civilian substitution could adversely affect their opportunities for promotion. [Ref. 23: pp. 48, 87] This is a key problem which has to be handled by properly designing any civilianization program. A solution would be making proportionate conversions in all pay grades or starting conversions with the lower grades [Ref. 13: pp. 16-17].

On the other hand, the constraints on the substitution of enlisted positions will place some limits on the number of officer positions that can be substituted, since an adequate military chain of command should be maintained to ensure that enlisted personnel are utilized most effectively. [Ref. 1: p. I-5-18]

12. Continuity of Operations

A difference in philosophy exists between the military and the civilian way of life with regard to moving personnel. The military continues to move personnel once every four to five years on the average. One of the primary reasons for moving is to provide a broad level of experience and a common knowledge base for military personnel to use which has the advantage of keeping the individuals exposed to new ideas and procedures that develop throughout DoD [Ref. 5: p. 80]. Exposure to new ideas or even long forgotten ones is a means of studying history to prevent mistakes from being repeated. However, civilians tend to prefer stability and move less than military personnel. They are more stable, tending to stay on one job for longer periods of time. As a result, they not only see what happened within their own jobs across several years, but they also remember past procedures that did not work, which a military person may try to reintroduce. This stability of the civilians provides a continuity of operations¹⁷; therefore, in this context, civilians offer an advantage in the military to civilian conversion. [Ref. 4: pp. 38-39]

¹⁷For example, the primary advantage of using civilians as DoD program managers would be program continuity, transfer of lessons learned, and better working relationships with the functional directorates and laboratories because of the reduced changing of the program managers. [Ref. 10: pp. 34-35]

13. Readiness

Military personnel comprise the force that is trained and ready for immediate deployment anywhere needed to support national interests. It is also possible to deploy some support units with the combat units during a wartime situation. If civilian personnel were assigned to these units, they could not deploy with their units to a combat zone. Consequently, replacements from other military sources would have to be found to replace them or the additional workload must be absorbed by the military personnel.

Mobility requirements and the absorption of duties creates a condition related to Herzberg's Two-Factor Theory. Herzberg proposed two general classes of work variables: satisfiers--content factors that result in satisfaction--and dissatisfiers--context factors producing dissatisfaction. Because of this organization, the theory is known as the Two-Factor Theory. [Ref. 21: p. 403] In this context, good working conditions do not necessarily lead to satisfaction; however, the absence of good working conditions does lead to employee dissatisfaction. For the military individual, mobility and the absorption of work due to the loss of a workmate is generally accepted as a condition of military life. Borrowing personnel to fill a vacant position requires the person to do a job that he or she was not originally designated to accomplish. Depending on the individual, this may affect his or her personal attitude and morale. If the unit commander decides

not to fill the old position at all, the unit operates in a degraded manner with production and quality falling and lower overall unit morale. Therefore, mobility and the possibility of work absorption are elements that must be considered during any conversion project, especially those that require mobility. [Ref. 4: pp. 39-40]

On the other hand, different manning philosophies between the military and the civilian may also deteriorate readiness. For example, the Navy provides a considerable number of personnel for range and depth in watch standers at ship operating and control stations, for maintenance, and for damage control. And, most technical-rated petty officers have watch, quarter, and station bill battle condition assignments which relate to their specialty. Many of these positions are critical to the fighting capability of the ship or aircraft. While there is some redundancy in combat assignments, large-scale deletion of military billets must be limited by combat watch assignments and their requirements for military duty sections in port. [Ref. 6: p. 85] Although there is a certain need, the Navy Civil Service and the commercial contract managers place reliance upon unattended equipment and the employment of off-watch personnel during underway replenishment operations. Consequently, the two civilianized options have limited capability to repair combat damage, fight fires, or sustain casualties. [Ref. 19: pp. 4-5]

In contrast to this lack of mobility of civilians which may deteriorate overall readiness, in another example, Blanco claims that using civilians in shipyards to accomplish work that is normally done by ship's crew during overhaul, releases the crewmen of these ships from overhaul work. They may be reassigned to ships at sea, or to the Navy Shore Intermediate Maintenance Activities (SIMA), thereby alleviating critical shortages and improving overall readiness, or they may be trained during overhaul to increase the crew's skill levels. [Ref. 14: pp. 10-12] Because of these both positive and negative implications foreseen, in each conversion decision, the unique properties and possible outcomes of each action should be considered before taking any action.

14. Training

Training is a factor that may be an advantage for the civilian worker occupying a military position. Military personnel receive a specialized training for their particular field and receive a specialty code to indicate their specialized training on their records. Military personnel having the same codes can perform their work anywhere in the world in that field and normally do not perform in another field unless they have cross-training. Civilian personnel typically have broader levels of training and experience;

thus, they are more capable of performing an increased number of tasks in a more efficient manner.

In contrast to this applicability of experience to their respective fields, training requirements for the military are much higher than those for civilian counterparts since they receive associated military training not necessarily related to their specialty. On the other hand, civilians only needed familiarization training for their positions since they already had the required background that the job description required; therefore, civilianization was expected to reduce the costs and time lost for training [Ref. 4: pp. 41-42]. Moreover, the use of military personnel in nonmilitary tasks could be an ineffective and inefficient use of personnel, due to these training costs of military personnel [Ref. 3: pp. 59-60]. However, the federal government has been accused of being dominated by technical professionals who do not respond clearly enough to the need for learning more about management. It is said that large private companies invest 6 to 8 times as much as the average federal agency does in the development of their executives, and the military services spend about 8 times the amount in improving the managerial effectiveness of the officer corps as is spent on civilian managers. [Ref. 5: p. 85] In fact, the in-service training costs of civilian manpower are far from negligible, especially in the more sophisticated technical skills and at the managerial level [Ref. 1: p. I-5-9], and it is expected

to increase in the future when we consider the increasing complexity of systems being used and managerial concerns.

Another issue is the social cost of training. The cost estimates used make no provision for the possible social costs involved in competing with the civilian economy for specific skills. Medical technicians are a good example. These skills are critically short in the civilian sector. Although the Services may be able to hire these skills away from the civilian sector at budget costs lower than those required for service recruitment and training of military personnel, the overall social costs of reducing the civilian labor supply of these skills may be significant. Therefore, the social benefits of training medical technicians in the military may justify any additional budget costs. [Ref. 1: p. I-5-11]

15. Findings

Conversions are very complex actions which require an in-depth analysis of all the consequences involved from cost to the morale implications and other human resource factors that may affect the unit. To rely on cost alone or the release of military personnel for other combat related duties, without analyzing the situation, may result in decreased unit cohesion and readiness. Some of the factors discussed in this section are neither advantage or disadvantage to a conversion action, while very few of them are considered to be advantages. On the other hand, most of them are disadvantages which affect unit

readiness. It is highly recommended that cost and the intended release of military personnel for combat duties should not be the only factors used to determine conversion actions. Rather, an investigation including the human resource aspects must also be accomplished to determine the true picture in each conversion regarding the advantages and disadvantages of any future position conversions.

III. STATISTICAL ANALYSIS OF MILITARY-CIVILIAN TRADE-OFFS

The endless supply of inexpensive labor provided by the draft fostered an environment in which efficient manpower management was less important than simply meeting requirements. Resource allocation frequently was driven more by history and tradition than by resource costs, and this caused substantial inefficiencies. Introduction of the All-Volunteer Force, coupled with increased public awareness of expanding manpower costs, changed this situation. More visible and tighter defense budgets mean that defense capability will be severely eroded unless alternative combinations of inputs are found. The military must find ways to control cost growth in the future and to compete effectively for qualified personnel in the civilian market. Effective resource allocation and manpower management are key parameters in finding cost-effective alternatives. [Ref. 2: p. 269]

A. RESOURCE ALLOCATION

Resource allocation refers to the distribution of defense resources among various missions. Inputs include equipment (military hardware, such as ships, planes, and artillery), supplies, and manpower, among others. The point Cooper makes is that there are lots of ways of achieving a given mission, each using a different combination of the basic resources.

Resource allocation refers to how the military chooses different combinations of inputs and different missions. Resource allocation is very important since each resource has costs associated with it.

There are many different technologically efficient alternatives for achieving a given mission but, given the prices of the inputs, there is only one combination that is economically efficient. Thus, the amount of defense that can be obtained from a given amount of defense spending is dependent upon how resources are allocated among missions, and how inputs are combined. To determine the appropriate mix of inputs, attention should be focused on changes in the relative prices of these inputs and on the opportunities for substitution. [Ref. 2: pp. 269-277] To form a background for our analysis, in the following sections we will briefly examine the issue of capital-labor resource allocation, the choice of military and civilian personnel, and the distribution of military personnel between first-termers and careerists.

1. Capital-Labor Substitution

At the most aggregate level of decisionmaking, one important decision in the question of resource allocation is the mix of capital and labor. For example, North Atlantic Treaty Organization (NATO) and Warsaw Pact are compared with each other not only in terms of manpower strengths, but also

in terms of capital equipment, such as the number of aircraft, ships, and tanks held by both sides. The cost of maintaining the defense establishment is dependent on the mix of capital and labor inputs.

Capital-labor decisions are motivated by several factors. The most obvious factor is that the draft artificially depressed the budget costs of military personnel and encouraged an overemployment of labor resources relative to the optimum. The removal of the draft, with concurrent pay increase, altered the cost of manpower relative to the cost of other resources. [Ref. 2: p. 278] Given the historical patterns of capital and labor usage and their relative costs, we can assess the efficiency of defense resource allocation. This assessment allows us to determine the effects that the removal of the draft had for allocative efficiency, and whether there are opportunities for efficiency gains in the future, in the form of reduced defense budgets for a given level of capability or increased defense capability for a given budget level. Economic theory tells us that as the wage-rental ratio increases, the military has an incentive to substitute capital inputs for labor. [Ref. 2: pp. 284-285] For example, analysis of the Navy's Perry class (FFG-7) frigate program suggests that the implementation of a gas turbine power plant, and the newer weapon system resulted in a reduction of approximately 100 men compared with the old Knox class (FF-1052) frigate. That is, if a steam power plant had

been chosen for the FFG-7, and old weapon systems had been continued, each ship would have required about 100 additional personnel to man the ship. [Ref. 24: pp. 14-15]

Further capital-labor substitution is possible by the types of labor-saving technological change produced by the economy. The continued rise in the cost of labor relative to the cost of capital, together with labor-saving technological changes, makes even greater capital-labor substitution likely in the future. [Ref. 2: p. 290]

2. Military-Civilian Substitution

In addition to capital-labor substitution, there are equally important choices within each of these broad categories. This section deals with labor-labor substitution possibilities, in particular military versus civilian substitution.

As discussed in the previous chapter, manning decisions have been the result of numerous factors, including military requirements, personnel management constraints, cost-effectiveness, and tradition. Military requirements means that there are some job assignments such as the infantry that are exclusively military in nature. For these types of assignments, the basic nature of the job dictates whether it must be manned by someone in uniform. Cooper estimates the number of such jobs to be relatively small, no more than 25 percent of the combined military and civilian personnel

strength. In addition to those jobs, there are a number of others that must be manned by uniformed personnel for mobilization purposes. Cooper, in his study of Military Manpower and All-Volunteer Force, assumed the magnitude of this mobilization requirement to account for another 25 percent of the uniformed force.

The remainder of the jobs could theoretically be manned by either military or civilian personnel on the basis of the job tasks. But many of these are in fact best manned by uniformed personnel in order to satisfy personnel management constraints, such as the maintenance of an adequate rotation base or the provision of sufficient career opportunities. A simple man-for-man comparison might appear to be cost-effective, but the end result may not be when these broader considerations are taken into account. On the other hand, those military requirements and personnel management constraints that limit substitution must be separated from those that are part of tradition. For example, it has been argued that activities near combat zones must be manned by uniformed personnel. In fact, the Vietnam experience showed that civilian contractors can perform satisfactorily in some support activities.¹⁸ [Ref. 2: p. 292]

¹⁸Civilian contractors provided key logistical support in Vietnam, including the operation of supply depots and the flying of cargo missions, often very close to actual combat.

The civilian effort consists of several different elements, including direct-hire civilian employees of the DoD, indirect hires, nonappropriated fund employees, and contract hires. This study focuses on the direct-hire civilian employees, which constitute two thirds of the total DoD civilian workforce.

One of the problems in evaluating the desirability of military-civilian substitution is the lack of good measures for making cost comparisons. Ideally, wage rates of civilian and military personnel could be used to evaluate possible substitution policies. However, the presence of large nonwage costs, such as training costs and deferred retirement annuities, makes it impossible to fully capture the cost implications by the use of simple wage comparisons. The policy question concerns how the DoD and Congress have historically responded in terms of the allocation of manpower resources between military and civilian personnel. If the DoD operates as a cost-minimizing agency, it should respond to changes in the relative prices of the two options. As the cost of military personnel falls relative to the cost of direct hires, DoD should respond by decreasing the use of direct hires relative to uniformed personnel. Conversely, as the cost of military personnel begins to rise relative to the cost of direct hires, the Services again should respond by increasing the use of direct hires relative to military personnel. In the following section, we evaluate the past military-civilian

resource allocation in DoD by analyzing the substitution policy in the 1974-1989 time period. But, before starting that section, the remainder of this section briefly examines the mix of military personnel between first-termers and careerists.

3. The First-Term/Career Mix

The distribution of military personnel by length of service has been recognized as one of the major manpower planning issues confronting the DoD. The concern for the years-of-service distribution of the force derives from two particular aspects of the military personnel system: its closed nature, and the strong link between promotion and length of service. The closed nature of the military personnel system means that the military draws its experienced personnel within the system. Thus, the Services must maintain an adequate number of junior personnel to maintain an adequate number of experienced employees. [Ref. 2: p. 303]

From a resource allocation perspective, the problem of choosing the experience mix can be simplified by viewing it in terms of first-term and career mix.¹⁹ This enlisted experience mix is a significant factor in cost and capability, and in the personnel issues of grade structure and promotion

¹⁹Although the Services differ in length of their enlistment obligations, it is convenient to view those with less than four years of years as first-termers and those with four or more years of service as careerists.

opportunity given the closed nature of the military as mentioned above. However, with the tremendous increase in military manpower and personnel costs, as Albrecht pointed out in his study of "Labor Substitution in the Military Environment", attention has shifted to considerations of economic efficiency in the allocation of these resources.

An efficient mix of first-termers and careerists should either minimize total costs at a specified level of effectiveness or maximize effectiveness for a given total cost. In theory, these mixes are achieved when the marginal costs of first-term and career personnel just offset their marginal contribution to military effectiveness. The difficulty is derived from the inability to accurately assess the relative productivity and substitutability of various categories of military labor. [Ref. 25: pp. 5-13]

From a policy perspective, the findings of Albrecht's optimization analysis indicate that a redistribution of manpower resources toward a more senior force in high skill occupations and toward a more junior force in lower skill occupations would be cost effective, despite the fact that reenlistment bonuses may be required to retain additional careerists in high skill occupations.

B. EMPIRICAL ANALYSIS

The preceding discussions provide the basis for evaluating past military-civilian manpower resource allocation in the

DoD. As indicated previously, if the cost of military personnel falls relative to the cost of direct hires, efficiency considerations would dictate that DoD respond by decreasing the use of direct hires. To test whether DoD has, in fact, responded in the directions dictated by efficiency is the objective of the next section.

1. Variable Selection and Model Specification

The demand for labor may be derived from the demand by a nation, its citizens or their representatives, for national security or defense expenditures. DeBoer and Brorsen assume the existence of a social welfare function

$$W = W(M, C) \quad (1)$$

where

W = social welfare;

M = national security; and

C = aggregate civilian purchases.

The defense department combines military inputs to produce national security. The security production function is

$$M = M(L, K, I) \quad (2)$$

where

L = military labor;

K = military capital; and

I = a measure of international security conditions.

The nation's legislature is assumed to maximize social welfare through its budget and tax decisions, and to purchase the security maximizing combinations of inputs, subject to the budget constraint

$$Y = C + wL + rK \quad (3)$$

where

Y = national income;

w = the military wage; and

r = the rental cost of military capital.

The constrained maximization of equation 1 subject to equation 3 yields a demand for military labor function in national income, relative military input prices, and international security conditions,

$$L = L(Y, w, r, I) \quad (4)$$

[Ref. 26: p. 857]

To apply the demand model to defense civilian labor, we use the number of full-time, permanent civilian personnel in DoD at the end of each fiscal year as the dependent variable. Because of differences in calculating their respective wages and differences in substitution

possibilities, wage-rate and nonwage-rate jobs are treated in two different demand functions.

The price of military labor in this study is calculated as active duty regular military compensation. For defense manpower requirements, full-time, permanent civilians and active duty military personnel are assumed to be substitutable for each other; wage-rate workers are assumed to be substitutes for enlistees and nonwage-rate civilian employees are assumed to be substitutes for officers.

All personnel entitled to active duty compensation receive the following elements:

- Basic Pay;
- Basic Allowance for Quarters, Variable Housing Allowance, and Overseas Station Housing Allowance;
- Basic Allowance for Subsistence;
- Federal Income Tax Advantage. [Ref. 27: p. 20]

Such personnel may also receive other elements of military compensation depending on the nature of their duty assignment, their military specialty, where they are stationed, their conditions of service, and so forth. But, for our simple historical comparison, we did not attempt to calculate cost savings by substituting one for the other; regular military compensation will meet our expectations.

The prices of civilian labor employed in defense are measured as the compensation for full-time, permanent

employees. Wage-rate and nonwage-rate employees are placed in two separate categories. The compensation numbers are derived by assuming that full-time employees work 40 hours a week, and do not include the other pays--primarily overtime and holiday pay--and benefits--life insurance, health benefits, worker's compensation, and pension and retirement benefits. Since benefits are not included in military compensation numbers, these basic compensation numbers for civilian employees are compatible with active duty regular military compensation.

If DoD responds as the efficiency hypothesis suggests, and if civilian and uniformed personnel are substitutable, the coefficient on the civilian defense labor price should be negative, while the coefficient on military pay should be positive.

Gross national product is used as the income measure, and is expected to affect labor demand positively, assuming that national security is a normal good and civilian labor contributes positively to it. DeBoer and Brorsen point out that several studies have found a positive relationship between national income and military purchases, though none have looked at labor specifically [Ref. 26: p. 858].

Increases in international tensions require more inputs to produce a given level of security, though the rise in the implicit price of security could cause the legislature to shift toward civilian purchases. We include a dummy variable for the Reagan administration, to test for

significant variations in security during his administration, which was a military build up period. President Reagan took office in fiscal year 1981, so that the Reagan administration dummy equals one beginning in fiscal year 1982. The dummy measures deviations from the Ford-Carter administration (fiscal years 1974-1981).

With these four explanatory variables the end strength demand model for wage-rate workers is:

$$ESTRENGTH_w = f(ENLRMC, COMP_w, GNP, REAGAN)$$

where

ESTRENGTH _w	= end strength, the annual end-of-year level of wage-rate workers in the armed forces;
ENLRMC	= enlisted regular military compensation;
COMP _w	= wage-rate worker's compensation;
GNP	= gross national product;
REAGAN	= a dummy variable for the Reagan administration, fiscal 1982-1989.

The end strength demand model for nonwage-rate employees is:

$$ESTRENGTH_n = f(OFFRMC, COMP_n, GNP, REAGAN)$$

where

ESTRENGTH _n	= end strength, the annual end-of-year level of nonwage-rate workers in the armed forces;
OFFRMC	= officer regular military compensation;

COMP _n	= nonwage-rate worker's compensation;
GNP	= gross national product;
REAGAN	= a dummy variable for the Reagan administration, fiscal 1982-1989.

2. Data and Estimation

Data were taken from different sources and compiled together for the 1974-1989 time period, all on a fiscal year basis. Average salary and numbers of people in each category for all permanent, full-time, wage board and non-wage board civilian employees by grade were derived from March 1990 Defense Manpower Data Center's Civilian Master File,²⁰ and are displayed in Appendix A. Detailed regular military compensation tables for officers and enlistees by grade are obtained from the Office of the Assistant Secretary of Defense Force Management and Policy Compensation Directorate, and are presented in Appendix B. National defense spending and Gross National Product, in current and constant Fiscal Year 1982 dollars, for the same 1974-1989 period were derived from the Fiscal Year 1991 Historical Tables of the Office of the Management and Budget, and are presented in Appendix C.

Descriptive statistics were calculated to present the data in such a way that the meaningful essentials of the data can be extracted and grasped easily. Arithmetic mean, which

²⁰Data were supplied by the Defense Manpower Data Center, Monterey, California.

is the most popular and useful measure of central location, and standard deviation, which is the positive square root of the variance of the measurements, are presented in Table III.

TABLE III
DESCRIPTIVE STATISTICS

Variables	Mean	Std. Deviation
ESTRENGTH _w	282487.00	24063.23
ESTRENGTH _n	593246.00	38331.46
OFFRMC	\$31625.55	8222.00
ENLRMC	\$14788.30	4069.62
COMP _w	\$20081.04	4878.02
COMP _n	\$21408.87	5082.60
DEFSPEND (in billions)	\$180.42	79.78
GNP (in billions)	\$3163.47	1195.32

Mean endstrengths of wage and nonwage-rate positions are 282,487 and 593,246, respectively during 1974-1989 time period. Average compensations of officers and nonwage-rate civilians are \$31,626 and \$21,409, respectively during the same time frame. Officers and nonwage-rate civilians are accepted to be substitutable for each other. Average payments for enlistees and wage-rate civilians are \$14,788 and \$20,081, respectively during the same time period. Like officer-nonwage-rate civilians trade-off, enlistees and wage-rate civilians are substitutable for each other. Average gross national product and defense spending for 1974-1989 time period are \$3,163 and \$180 billion respectively.

The models for wage-rate and nonwage-rate demand are first estimated using ordinary least squares (OLS) regression model by using current year values, plus with real values adjusted to 1982 price level, and finally using two stage least squares (2SLS) technique.

3. Estimation Results

Estimation results for ordinary least squares technique using current year values are reported in Tables IV and V.

In the end-strength demand equation for the wage-rate workers, in Table IV, wage-rate compensation has the expected negative coefficient, and is statistically significant. The other factor price coefficient, enlisted regular military

compensation, also has the expected positive sign. Though the coefficient is not significant, it demonstrates that DoD responded to factor price changes by substituting one for the other. The insignificance of enlisted regular military compensation may be due to its collinearity with wage-rate worker's compensation (correlation coefficient = .74).

TABLE IV
ESTIMATION RESULTS FOR THE WAGE-RATE LABOR DEMAND
(OLS ESTIMATION USING CURRENT NUMBERS)

Independent Variables	Coefficients	t-statistics
ENLRMC	3.780	1.734
COMP _w	-6.570	-4.230***
GNP	-9.723	-2.099**
REAGAN	10555.430	2.349**
INTERCEPT	384002.920	38.726***
F-VALUE		117.993***
R-SQUARE		0.977

* Significant at 10 percent level.

** Significant at 5 percent level.

*** Significant at 1 percent level.

Gross national product has an unexpected negative coefficient, which is statistically significant. We had expected that the economic growth would increase the demand for labor overall. But, probably because of the shift in defense civilian workforce toward non-wage jobs during this time period, we observed this negative effect on the end strength of wage-rate positions. The same gradual shift was indicated by Cooper [Ref. 2: p. 295]. The dummy variable coefficient for Reagan administration indicates positive difference in the taste for civilian labor comparing to the previous Ford-Carter period, perhaps associated with the military build up.

In the end-strength demand equation for the nonwage-rate workers, in Table V, average salary for nonwage-rate employees has negative coefficient, as expected, and is significant. The other factor price coefficient, officer regular military compensation, also has the expected positive sign, and is significant at the 10 percent level of significance. These results suggest that DoD responded to factor price changes by substituting one input for the other in the direction suggested by efficiency. Gross national product has a positive, significant coefficient. Economic growth increased the demand for nonwage-rate labor.

The dummy variable coefficient for Reagan administration indicates the same significant and positive difference in the taste for civilian labor as for wage-rate jobs in Table IV.

TABLE V
ESTIMATION RESULTS FOR THE NONWAGE-RATE LABOR DEMAND
(OLS ESTIMATION USING CURRENT NUMBERS)

Independent Variables	Coefficients	t-statistics
OFFRMC	5.312	1.826*
COMP _n	-38.314	-3.568***
GNP	132.828	4.950***
REAGAN	61813.327	5.267***
INTERCEPT	794403.660	11.964***
F-VALUE		62.634***
R-SQUARE		0.958

* Significant at 10 percent level.

** Significant at 5 percent level.

*** Significant at 1 percent level.

As a second step to catch the real effect, each factor price is divided by the composite deflator which adjusts the numbers to 1982 prices. In addition, we used gross national product in 1982 figures to insure homogeneity. These estimation results are presented in Tables VI and VII.

TABLE VI
ESTIMATION RESULTS FOR THE WAGE-RATE LABOR DEMAND
(OLS ESTIMATION USING CONSTANT 1982 NUMBERS)

Independent Variables	Coefficients	t-statistics
ENLRMC	12.447	2.335**
COMP _w	9.973	1.581
GNP	-37.835	-4.803***
REAGAN	3120.835	0.371
INTERCEPT	-16167.907	-0.071
F-VALUE		39.369***
R-SQUARE		0.935

* Significant at 10 percent level.

** Significant at 5 percent level.

*** Significant at 1 percent level.

In the demand equations, we observed the same positive coefficients for enlisted and officer regular military compensation, which means that as the price of military personnel increased, DoD responded by substituting civilians for military.

TABLE VII

ESTIMATION RESULTS FOR THE NONWAGE-RATE LABOR DEMAND
(OLS ESTIMATION USING CONSTANT 1982 NUMBERS)

Independent Variables	Coefficients	t-statistics
OFFRMC	4.877	1.753*
COMF _n	9.579	3.157***
GNP	62.302	6.272***
REAGAN	45879.012	5.478***
INTERCEPT	-34123.121	-0.265
F-VALUE		56.305***
R-SQUARE		0.953

* Significant at 10 percent level.

** Significant at 5 percent level.

*** Significant at 1 percent level.

However, in contrast to estimation results in current numbers, civilian compensation coefficients have an unexpected positive sign in both estimations, though it is not significant for wage-rate workers. It means that DoD did not respond to price changes of civilian employees in real terms, although it did respond to changes in current values. It should have substituted military personnel for civilian as the real price of civilians had gone up. Gross national product and dummy variable have the same signs as in the first estimations.

As a third step, we suspected that a simultaneity bias may affect the demand models. Compensation figures, explanatory variables of our civilian labor demand model, may be a function of the level of employment in a truly simultaneous model. To address this question, we specified two supply equations for each civilian group:

$$COMP_w = f(ESTRENGTH_w, DEFSPEND, REAGAN)$$

$$COMP_n = f(ESTRENGTH_n, DEFSPEND, REAGAN)$$

where

$COMP_w$ = wage-rate worker's compensation;

$COMP_n$ = nonwage-rate employee's compensation;

$ESTRENGTH_w$ = end strength, the annual end-of-year level of wage-rate workers in the armed forces;

ESTRENGTH_n = end strength, the annual end-of-year level of nonwage-rate employees in the armed forces;

DEFSPEND = defense spending; and

REAGAN = dummy variable for the Reagan administration, fiscal (1982-1989).

The end strength of wage-rate and nonwage-rate workers and their respective compensation were assumed to be endogenous variables in the simultaneous system. All the other variables are treated as exogenous and used as instruments to explain the endogenous variables. The models are estimated using two stage least squares, and estimation results are reported in Table VIII and Table X for the demand functions, and in Table IX and Table XI for the supply functions.

In the two stage least squares estimation for the wage-rate workers demand equation in Table VIII we observed the same effects as in the ordinary least squares estimation: own-price has a negative coefficient and the price of enlisted military personnel has a positive coefficient. That means DoD responded correctly to factor price changes, even when the simultaneity was captured. DoD employed less civilian as the price of wage-rate workers increased. DoD also responded to changes in price level of military personnel by substituting more civilians.

The only difference in two stage least squares estimation from the ordinary least squares estimation is that the negative effect of gross national product, and the

TABLE VIII
ESTIMATION RESULTS FOR THE WAGE-RATE LABOR DEMAND
(TWO STAGE LEAST SQUARES ESTIMATION)

Independent Variables	Coefficients	t-statistics
ENLRMC	11.179	1.739*
COMP _w	-13.725	-2.400**
GNP	-6.224	-0.749
REAGAN	11573.093	1.498
INTERCEPT	406679.020	17.413***
F-VALUE		40.191***
R-SQUARE		0.936

* Significant at 10 percent level.

** Significant at 5 percent level.

*** Significant at 1 percent level.

positive effect of the Reagan administration on the end strength of wage-rate worker are not significant anymore for wage-rate workers in Table VIII.

TABLE IX
ESTIMATION RESULTS FOR THE WAGE-RATE COMPENSATION
(TWO STAGE LEAST SQUARES ESTIMATION FOR THE SUPPLY EQUATION)

Independent Variables	Coefficients	t-statistics
ESTRENGTH _w	-0.129	-5.517***
DEFSPEND	13.459	1.367
REAGAN	1546.431	1.656
INTERCEPT	53366.439	6.710***
F-VALUE		220.651***
R-SQUARE		0.982

* Significant at 10 percent level.

** Significant at 5 percent level.

*** Significant at 1 percent level.

In the nonwage-rate workers' demand estimation using two stage least squares technique in Table X, the effects are exactly in the same direction as they were in ordinary least squares estimation.

TABLE X
ESTIMATION RESULTS FOR THE NONWAGE-RATE LABOR DEMAND
(TWO STAGE LEAST SQUARES ESTIMATION)

Independent Variables	Coefficients	t-statistics
OFFRMC	10.844	2.420**
COMP _n	-61.205	-3.521***
GNP	187.194	4.409***
REAGAN	76208.515	4.823***
INTERCEPT	930320.030	8.816***
F-VALUE		45.172***
R-SQUARE		0.943

* Significant at 10 percent level.

** Significant at 5 percent level.

*** Significant at 1 percent level.

The only difference is that the coefficient of the other factor price (officer regular military compensation) is significant in the new estimation, while it was not significant in ordinary least squares estimation.

TABLE XI
ESTIMATION RESULTS FOR THE NONWAGE-RATE COMPENSATION
(TWO STAGE LEAST SQUARES ESTIMATION FOR THE SUPPLY EQUATION)

Independent Variables	Coefficients	t-statistics
ESTRENGTH _n	-0.087	-5.426***
DEFSPEND	101.316	12.489***
REAGAN	-299.905	-0.413
INTERCEPT	54773.514	6.630***
F-VALUE		362.510***
R-SQUARE		0.989

* Significant at 10 percent level.

** Significant at 5 percent level.

*** Significant at 1 percent level.

C. FINDINGS

As discussed previously, if the cost of uniformed military personnel falls relative to the cost of direct hires, efficiency would dictate that DoD respond by decreasing the use of direct hires.

Ordinary and two stage least squares estimations for both wage-rate and nonwage-rate equations demonstrated that own-price has negative and the price of military personnel has a positive effect on the end strength of defense civilians. These results indicate that DoD responded correctly to factor price changes, even when potential simultaneity bias was accounted for. DoD employed fewer civilians as the price of wage-rate workers increased and vice versa. In another words, it responded to changes in price level of military personnel by substituting more civilians.

However, in contrast to estimation results in current numbers, in the second estimation using real figures, civilian compensation coefficients have a positive sign in both estimations, though it is not significant for wage-rate workers, in Table IV. It means that DoD did not respond to changes in the real price of civilian employees. It should have substituted military personnel for civilians as the real price of civilians had gone up. DoD responded to the price changes in real figures in only one direction: it employed more civilians as the price of military personnel increased

but it did not respond to the increasing price of civilians which might substitute military for them to allocate the resources efficiently.

Gross national product has an unexpected negative, significant coefficient for wage-rate workers' demand equation. We had expected that economic growth would increase the demand for labor overall. The reason for this negative effect, as explained earlier, may be the shift in defense civilian workforce toward non-wage jobs during the time period concerned. The dummy variable coefficient for the Reagan administration indicates a significant positive effect on the demand for civilian labor during the Reagan build-up. It may be caused by the increasing effect of cold war and some small scale conflicts on military build up during this period.

IV. SUMMARY AND CONCLUSION

There is a growing concern regarding the cost of national defense. One reason for this is that many people believe that immense defense spending is the cause of economic ills. And, in this huge, but decreasing, defense spending, personnel cost has received considerable attention. These concerns indicate the urgency of searching for a means of reducing personnel costs without causing unacceptable reductions in war-time readiness.

The military/civilian mix of the force has been discussed as one solution to this problem. The argument has been made that civilians should be substituted for military personnel wherever possible, because this has been seen as a means of maintaining military force levels in a zero-draft environment, and because they have been said to be less costly. This argument, of course, recognizes that certain billets must be filled by a member of the military because of the reasons mentioned in Chapter 2. These include law, training, security, discipline, rotation, combat readiness, or the need for military background to successfully perform assigned duties.

Although "least cost" is an implied criterion in the guidance concerning military-civilian determinations, cost probably was not a primary consideration when the military-civilian determination policy was first developed. Civilians

were placed in all positions not requiring military incumbency because of the DoD policy that "civilians shall be used in all positions which do not require military incumbents." And, it was simply assumed that civilians were less expensive.

However, as discussed previously, if the cost of uniformed person falls relative to the cost of a direct hire civilian employee, cost-minimization would dictate that DoD respond by decreasing the use of direct hires. In this thesis, estimations for both wage-rate (blue-collar) and nonwage-rate (white-collar) equations demonstrate that price of civilians has the hypothesized negative effect, and that the price of military personnel has the hypothesized positive effect on the end-strength of defense civilians. These results indicate that DoD responded correctly to factor price changes, even when simultaneity bias²¹ was accounted for. DoD employed more civilians as the relative price of civilians decreased, and less as the relative price of civilians increased.

However, in contrast to estimation results using current dollar values for the variables, in the second estimation using the dollar values adjusted to 1982 price level, civilian compensation figures have a positive sign in both estimations,

²¹As explained in Chapter 3, we suspected that a simultaneity bias may affect the demand models. Civilian compensation figures, which are explanatory variables of the civilian labor demand model, may be a function of the level of employment in a truly simultaneous model. To account for this possible simultaneity effect, same demand models were estimated using the two stage least square technique.

though it is not significant for wage-rate workers. It means that DoD did not respond to changes in the real price of civilian employees. It should have substituted military personnel for civilians as the real price of civilians increased. DoD responded to the price changes in real figures in only one direction: it employed more civilians as the price of military personnel increased; but it did not respond to the increasing price of civilians.

In present circumstances, the total cost of filling a white-collar job with a federal civilian is less on average than filling the same job with an equivalent military employee. In the case of a blue-collar job, military recruits diminish in the face of demographic and economic trends, and it is likely that military pay will increase more rapidly than federal civilian pay. If this occurs, the financial advantage of replacing military personnel with white-collar civilians would grow larger, and it may even become profitable to consider blue-collar substitution, particularly if legislation is enacted to correct the anomalies in the blue-collar wage-setting process. [Ref. 9: p. 74]

For purposes of determining the least costly resource (military or civilian), one would expect a fair amount of consistency regarding the treatment of costs by different studies, (although they may not have been developed for the same purpose). However, this is not the case. A review of the cost elements treated in various studies reveals

inconsistencies as the same costs are sometimes treated differently. Furthermore, it is found that one study often excludes a cost that another includes. Additional research is required before an acceptable determination as to which elements should be included in a correct cost model can be made. Nevertheless, the present model, which is based on a recent Rand study, may be a good example.

In short, the issue of minimizing the cost for required personnel services is a complex one. Thus, a sound analytical foundation should be provided before any policy action is taken so that the probability of counterproductive results is minimized. To this end, a first step might be to determine the incremental cost of each class of employee for the specialty being considered for civilianization [Ref. 16: p. 10]. The next step might be to project the future trends that are likely to affect the decision and what impacts a civilianization decision would have on costs [Ref. 4: pp. 29-30]. Only after this has been done, can reliable policy recommendations be made.

On the other hand, the conversion of military positions to civilian positions tends to develop only one view of the entire effort that may be involved, in particular, the factor of cost. Yet, even cost elements were not always considered in early conversions, as mentioned previously; civilians were often substituted for military personnel when the position was not required to be filled by a uniformed personnel. Certain

factors, mostly not quantifiable, are difficult to evaluate, and can support either the use of military personnel or civilians in a job, while some others may have either advantages or disadvantages, as discussed in Chapter 2. Consequently, some factors affecting military-to-civilian conversions should be discussed in detail even after determining that one type of worker may be cheaper than the other.

Policy changes are required if one wants to go beyond the position conversions, from military to civilian, having been done so far. It would dictate using civilians in units and under conditions that have traditionally been considered the military's domain. In today's changing military environment, under current threat concepts, further substitutions by civilians may be required to reduce the defense budget and allocate limited resources effectively. Specific examples were given to show the possibility of further conversions. One of them is in the Navy's fleet support. [Ref. 9: pp. 57-58] A more extreme example is the use of civilians on Navy combatants--coming as a result of attitude changes toward women at sea, the success of Military Sealift Command's civilian-manned replenishment oilers, the abundance of technical representatives on carriers and surface ships, and extensive civilianization ashore. A negative conclusion drawn from this example is that the direct wages and benefits paid to a Navy enlisted man fall short of the wage level required

to attract a civilian to work on a ship. This pay differential between seamen and civilians on the same ship will undoubtedly cause further military retention problems. [Ref. 6: pp. 97-98] Also, the General Accounting Office (GAO) recommended that the Navy use civilians in shipyards to accomplish work that is normally done by ships' crew during overhaul. The crew released from overhaul work could be reassigned to ships at sea, thus alleviating some of the critical shortages on these ships; or skilled technicians could be transferred to critical shore activities such as the Shore Intermediate Maintenance Activities (SIMAs); or they could be trained to increase the skill levels during overhaul. [Ref. 14: pp. 12-13] Another specific example given by Binkin is the possibility of transferring to civilians the part of airlift and air refueling missions now carried out by U.S Air Force personnel. [Ref. 9: pp. 58-59] Because of the nature of its operations, the Army appears to have fewer opportunities than the other Services to employ civilians in units traditionally manned by soldiers. However, support units, operating exclusively in the rear areas, could be considered for civilian substitution [Ref. 9: p. 59]. One can observe that majority of the military personnel are performing supervisory, administrative, and other technical functions in industrial facilities. GAO believed civilians could do these functions; in fact, civilians were occupying either first-or second-level

supervisory positions in the operating departments at the activities mentioned. [Ref. 7: pp. 18-19, 26, 29-30]

On the other hand, efforts to allocate resources effectively may hamper wartime readiness, which should be considered in conversion decisions. For example, attempts to balance medical manpower requirements with budgetary constraints have led to staff reorganization within the Medical Service. As a result, the Dental Corps relinquished 98 active duty dental officer authorizations to favor the Nurse Corps. To compensate for the lost active duty dental slots, 98 civilian contract dental slots were made available in CONUS. Civilianization of the Dental Corps, as designed, may not reduce the Corps' clinical capability to produce adequate dental services to maintain a peacetime military. But, in fact, because of the lack of readiness education and training on the part of the civilian contract dentist, civilianization will reduce the Corps' overall readiness capability. [Ref. 15: pp. 2, 3, 9-12] For the reason mentioned above, which explains the effect of further civilianization on wartime readiness, the civilianization potentials indicated in different studies should be examined cautiously before any attempt is made.

However, Binkin found that some of the complaints commonly voiced by the military were based on incorrect perceptions. The authority to transfer or reassign civilians was found to be less restricted than military managers argued. Complaints

about the inability to deal effectively with marginal employees are also ill-founded. Current regulations appear to provide managers with adequate tools that are not being used consistently or effectively. The implications of the relative immobility of the civilian workforce have been overemphasized. On the other hand, Binkin argues that some problems cited by defense managers were found to have greater validity. Reductions-in-force of civilian employees have an unusually disruptive effect on productivity largely because of regulations that give priority to seniority, veterans' preference, and the like, rather than merit. Present legislation and regulations governing the civilian retirement system present obstacles to effective management. Defense managers are hampered in their efforts to manage the work week effectively because of the excessively restrictive legislation governing hours and days of work for civilian employees. [Ref. 9: pp. 80-81]

In short, the Services recognize that certain billets must be filled by a military person because of the military requirements.²² Remaining billets, theoretically, can be filled either by a military person or a civilian. Thus,

²²A clear distinction must be drawn between jobs that, for reasons of national security, should be filled by military employees and those that can be filled by civilians. The Services review in detail the job structure of each military service and defense agency, the deployability of these billets, and the policies governing rotation, promotion, and career development of military personnel. [Ref. 9: pp. 75-76]

incremental cost of each class of employee, for the specialty being considered for civilianization, needs to be determined, and the future cost trends needs to be projected.²³ After these have been done, one can claim that one resource is cheaper than the other, and can recommend in favor of conversion. However, before making a reliable policy recommendation, one should consider the other human resource factors. This would then allow the Services to have only the most essential manpower on their payroll, to reduce the total amount spent on training and on other expenses, and to get the greatest return for their money.

²³Since civilians are paid out of operations and maintenance funds, over which local commanders have control, each civilian hired means less money for other use of these funds. Military personnel, on the other hand, are free since they do not affect the local commander's budget. This bias should be eliminated by a change in the method of accounting. [Ref. 9: p. 81]

APPENDIX A

TABLE 12

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1974
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN										TOTAL	
	GS	MS	WS	ML	MS	WS	ML	MS	WS	ML	#	AVG
0	3	19178	21	7873							5	14776
1	760	5184	1666	7470	335	10665	37	8578	2778	7258		
2	9959	5976	11345	7777	314	11194	490	8516	22108	7033		
3	46721	7065	4615	8340	514	11797	128	9227	51978	7212		
4	73501	8237	8237	8779	737	12235	396	9738	82740	8334		
5	78775	9358	32254	9243	1350	12818	717	10572	113096	9374		
6	32742	10570	21637	9934	1927	13476	633	10996	56939	10431		
7	54359	11510	13791	10377	2424	13765	568	11611	76168	11303		
8	11714	12978	34474	10731	3300	14222	1165	11825	30743	11508		
9	6339	13975	28564	11410	3907	16845	1593	12508	98405	13250		
10	6253	15606	85220	11971	7779	15402	3425	13158	102737	12492		
11	67455	16854	13613	12514	2719	16168	1012	13637	94799	15719		
12	58208	20088	12008	13089	1705	16794	351	14043	72272	18818		
13	38652	23746	3584	13510	1851	17688	74	16175	44161	22664		
14	14975	27914	1039	13935	1061	18549	11	15341	17386	26674		
15	6138	32838	61	14468	415	19624	11	15496	6585	31832		
16	659	35828			191	20487			850	32381		
17	116	36000			58	21900			194	30789		
18	58	36000			21	23127			59	31418		
19					22	24803			22	24803		
09												
TOTAL	564206	13671	287161	109791	317501	151021	10592	122101	893716	12840		

TABLE 13

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1975
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	DOD PLAN										TOTAL	
	N	AVG	M	AVG	M	AVG	M	AVG	M	N	AVG	
1	1	12317	-	-	-	-	-	-	-	1	12317	
2	233	5140	4201	5499	295	12236	-	33	9364	2173	8439	
3	758	6211	5631	5643	291	12694	-	479	9778	17695	7906	
4	4621	7417	4314	6415	516	11315	-	118	10515	49339	7661	
5	7454	8619	7315	5322	737	11664	-	403	10968	83809	8805	
6	6569	9249	6914	10449	1359	14410	-	814	11900	112444	10075	
7	3572	11110	2434	11222	534	15135	-	638	12360	57433	11298	
8	5781	11051	17901	11579	2308	15454	-	518	12937	76478	12112	
9	1720	13712	35563	12047	1499	16003	-	1124	13404	50185	12753	
10	6147	14074	20223	12784	4875	16666	-	1678	14115	99903	14209	
11	655	16452	27231	12463	2694	17369	-	3193	14375	100117	14003	
12	6712	17743	46451	14041	2966	17975	-	1091	15459	96314	16785	
13	6712	21143	11760	14621	1576	13211	-	315	15571	74014	20081	
14	3957	25132	37651	15184	1797	19579	-	691	16163	44138	26093	
15	1543	30451	11751	15556	1044	20455	-	191	16954	17121	28006	
16	6531	34510	811	15090	442	21573	-	21	17909	6578	33219	
17	671	36745	-	-	1751	22379	-	-	-	771	32881	
18	1351	26201	-	-	48	23681	-	-	-	206	31934	
19	27	26051	-	-	17	25640	-	-	-	60	33065	
20	11	17721	-	-	21	26030	-	-	-	22	25714	
21	41	15431	-	-	-	-	-	-	-	1	15481	
TOTAL	50113	14442	277221	13397	34471	164120	-	10641	137591	889780	13887	

TABLE 14

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1976
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN										TOTAL	
	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	#	AVG
1	71	2,251	131	12,571	23	1,643	24	1,643	24	1,643	24	1,643
2	34	5,723	1,371	20,631	203	13,966	203	13,966	203	13,966	203	13,966
3	51	67,521	8,734	96,571	2,031	12,843	2,031	12,843	2,031	12,843	2,031	12,843
4	72	7,651	7,971	10,374	505	12,843	505	12,843	505	12,843	505	12,843
5	75	9,771	7,924	10,784	412	15,136	412	15,136	412	15,136	412	15,136
6	79	11,248	4,269	11,526	1,505	15,099	1,505	15,099	1,505	15,099	1,505	15,099
7	83	11,657	21,094	12,311	1,708	16,079	1,708	16,079	1,708	16,079	1,708	16,079
8	84	12,664	12,311	17,611	2,187	16,962	2,187	16,962	2,187	16,962	2,187	16,962
9	124	14,441	31,293	17,202	2,011	17,231	2,011	17,231	2,011	17,231	2,011	17,231
10	111	17,421	8,776	13,952	6,541	18,333	6,541	18,333	6,541	18,333	6,541	18,333
11	123	17,324	8,964	16,924	7,231	19,231	7,231	19,231	7,231	19,231	7,231	19,231
12	123	17,311	6,441	15,187	7,721	19,211	7,721	19,211	7,721	19,211	7,721	19,211
13	111	21,741	10,531	15,958	7,991	20,410	7,991	20,410	7,991	20,410	7,991	20,410
14	183	25,761	3,507	16,713	17,461	21,346	17,461	21,346	17,461	21,346	17,461	21,346
15	183	31,123	11,161	17,267	10,231	23,084	10,231	23,084	10,231	23,084	10,231	23,084
16	66	36,086	7,911	17,358	4,051	23,159	4,051	23,159	4,051	23,159	4,051	23,159
17	97	27,750	2	2	157	24,126	2	24,126	2	24,126	2	24,126
18	12	3,500	2	2	56	2,589	2	2,589	2	2,589	2	2,589
19	41	27,600	2	2	8	18,750	2	18,750	2	18,750	2	18,750
20	2	2	2	2	5	24,421	2	24,421	2	24,421	2	24,421
TOTAL	5,515	1,524	26,914	13,771	5,071	15,221	9,571	15,161	8,711	14,906		

TABLE 15

**AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1977
FOR ALL PERMANENT, FULL-TIME EMPLOYEES**

GRADE	PAY PLAN						TOTAL					
	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG
1	11	12,317	1	-	-	-	-	-	-	-	1	12,317
2	33	16,471	1,073	9,517	240	14,324	21	11,268	1761	9691		
3	677	16,871	73,461	10,418	2731	14,982	445	11,666	15,370	9023		
4	2,239	21,791	1,223	11,117	495	15,062	126	12,290	43,433	8539		
5	7,773	24,627	7,674	11,728	823	16,551	365	13,162	79,654	9775		
6	20,760	17,771	27,256	12,413	1356	17,342	785	14,232	109,187	11,292		
7	33,924	17,159	25,576	11,406	1766	19,200	636	14,924	56,892	12,827		
8	52,743	13,339	15,470	13,986	2262	18,576	392	15,645	71,872	13,665		
9	11,163	15,111	30,136	14,451	3120	19,100	937	16,045	46,346	14,975		
10	6,331	16,145	27,551	15,299	4347	20,107	1575	16,943	95,988	16,067		
11	5,232	17,146	37,221	15,042	7650	23,655	3023	17,745	97,299	16,603		
12	6,193	19,532	24,456	18,653	7675	21,572	980	18,609	97,099	18,905		
13	6,397	23,527	9,551	17,531	1,443	22,167	207	18,768	75,540	22,681		
14	5,725	28,280	13,821	13,164	1768	23,017	75	19,164	42,790	27,262		
15	35,431	33,552	10,241	19,720	959	23,944	14	19,830	170,581	31,932		
16	593	33,437	71	19,183	413	25,019	1	20,134	6,476	38,338		
17	23	44,111	1	-	145	26,641	-	-	744	41,642		
18	17	47,551	1	-	54	27,206	-	-	191	41,661		
19	63	47,551	1	-	21	27,911	-	-	53	44,563		
20	1	-	1	-	41	31,024	-	-	6	31,024		
TOTAL	550,791	15,193	2,610,791	16,855	29,071	24,159	9,032	16,508	857,756	15,916		

TABLE 16

AVERAGE SALARY AND NUMBER OF DoD EMPLOYEES BY GRADE IN 1978
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN										TOTAL	
	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG
1	11	16,111	-	-	-	-	-	-	-	-	1	18,011
2	57	52,171	1	15,361	253	15,673	17	12,931	1591	10,323	1	10,323
3	87	76,761	2	11,261	273	16,115	613	12,581	16943	9,670	1	9,670
4	296	97,661	79	17,451	625	17,981	1111	13,211	42526	9,186	1	9,186
5	71	131,761	97	17,531	614	17,827	335	14,271	79465	10,432	1	10,432
6	617	115,761	274	18,561	1557	18,724	756	15,505	111174	12,123	1	12,123
7	360	176,161	123	18,451	1727	19,767	615	16,939	56262	13,701	1	13,701
8	520	163,761	158	18,111	2202	20,360	378	16,926	71408	14,690	1	14,690
9	111	164,271	203	18,631	2562	20,830	933	17,662	46995	16,182	1	16,182
10	623	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
11	529	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
12	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
13	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
14	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
15	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
16	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
17	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
18	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
19	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
20	619	175,461	271	19,211	4267	21,673	1,093	19,639	95167	17,328	1	17,328
TOTAL	52,614	175,461	271	19,211	4267	21,673	1,093	19,639	95,167	17,328	1	17,328

TABLE 17

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1979
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN										TOTAL	
	GS	MS	WS	MS	WS	MS	WS	MS	WS	MS	#	AVG
1	37925	1	17534								2	27753
2	3221	6654	6301	11151	211	16238					1377	10946
3	5046	7875	6836	11745	286	16818					12562	10353
4	35943	9183	1615	12865	469	19094					50167	9638
5	67832	17634	6449	13240	831	19426					77415	10951
6	81129	12140	28406	16056	1475	19433					129785	12728
7	36129	13717	19231	15105	1729	20528					55682	14439
8	52733	15075	15192	15727	2207	20956					70694	15414
9	11314	17179	29606	16257	3012	21633					44539	16868
10	61130	13259	26249	17230	4165	22674					93041	18181
11	61731	10580	78208	18151	7744	23334					95156	18775
12	69218	22521	47836	19115	2577	24295					96578	21377
13	68431	26599	9873	19627	1403	24955					80275	25727
14	36317	32263	3180	20563	1759	26090					41326	31082
15	14251	39040	908	21396	918	27015					16794	36535
16	5931	46673	751	21338	400	28061					6407	43363
17	5571	48328			130	29235					697	44767
18	1341	60342			51	30850					189	44356
19	461	69531			5	32827					53	47769
20					5	34811					5	34811
TOTAL	55351	144191	256768	168111	29551	227321					91721	185841
											96744	18296

TABLE 18

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1980
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN										TOTAL		
	GS	MS	MS	MS	MS	MS	MS	MS	MS	MS	#	Avg	#
1	132	7514	763	1319	150	17487	11	13113	1103	12265	12	22482	12
2	6566	8571	5371	12556	371	19278	364	16145	11044	11047	11044	11047	11044
3	12753	9723	7502	17700	423	19596	94	15100	59371	10239	59371	10239	59371
4	92314	11297	6060	16371	657	20163	311	16377	76453	11054	76453	11054	76453
5	17471	13273	15179	16179	1457	21047	805	17492	111836	13601	111836	13601	111836
6	34374	16036	15043	17076	1692	22035	594	17979	54677	15447	54677	15447	54677
7	51041	18273	20091	17658	2675	23488	937	19787	43431	18251	43431	18251	43431
8	61231	19459	25618	18771	4211	24593	1331	20222	92258	19513	92258	19513	92258
9	52461	23271	74343	19774	7753	25274	2944	21810	91390	20451	91390	20451	91390
10	92314	25531	25944	23751	2182	26419	753	22844	94667	23062	94667	23062	94667
11	73351	25339	9112	21623	1356	27125	165	23185	80929	27604	80929	27604	80929
12	25311	24361	5041	23721	1747	23524	81	21940	40053	33216	40053	33216	40053
13	14672	42421	8121	27993	895	29251	13	25340	16386	39049	16386	39049	16386
14	5024	27251	101	27672	395	30457	11	24219	6124	45935	6124	45935	6124
15	25311	29371	1	27672	127	31851	1	205	38720	38720	38720	38720	38720
16	71	1121	1	1	471	31992	1	54	35795	35795	35795	35795	35795
17	51121	1	1	1	51	34310	1	1	40234	40234	40234	40234	40234
18	1	1	1	1	51	35613	1	1	35618	35618	35618	35618	35618
19	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL	107451	107451	107451	107451	107451	107451	107451	107451	107451	107451	107451	107451	107451

TABLE 19

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1981
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN										TOTAL	
	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG
1	4	12561	31	12157	11	10730	-	-	-	-	81	17634
2	322	9527	963	1747	141	14522	12	16097	-	-	1435	12749
3	4731	9377	5121	17714	212	10733	379	15154	-	-	10007	11988
4	3402	11636	7474	14651	414	21113	94	16428	-	-	37961	11115
5	7173	12447	6043	15249	871	21913	313	17536	-	-	77418	12628
6	25003	14034	23547	16337	1484	22795	852	18964	-	-	116576	14745
7	35026	15619	18170	17673	1665	23934	568	19613	-	-	55361	16757
8	54359	17439	15281	18431	2371	24738	361	20669	-	-	72302	17899
9	17619	17672	31301	17040	2969	25619	965	21602	-	-	45963	19727
10	67216	17261	24771	20413	4521	26739	1370	22742	-	-	93364	21184
11	5757	24792	75124	21493	8129	27439	3424	23627	-	-	92244	22255
12	21651	2561	22361	27591	2347	26794	853	24902	-	-	97518	25335
13	27271	2631	5634	3524	1401	29577	165	24794	-	-	85479	30120
14	5052	32416	2473	24214	1879	30842	114	25796	1062	30130	41015	36111
15	1515	34331	723	26273	924	31620	18	45946	150	42027	15996	42465
16	6121	4262	45	35693	395	33328	1	26024	11	47752	6481	43144
17	4	5114	-	-	171	34753	-	-	-	-	200	40150
18	2	5114	-	-	46	34305	-	-	-	-	51	38191
19	3	5114	-	-	41	35123	-	-	-	-	7	42693
20	1	5114	-	-	6	37412	-	-	-	-	6	40914
21	1	5114	-	-	-	-	-	-	-	-	1	18741
TOTAL	56211	1561	2435	1924	2623	4665	9431	22113	1243	36945	850393	21117

TABLE 20

**AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1982
FOR ALL PERMANENT, FULL-TIME EMPLOYEES**

GRADE	PAY PLAN										TOTAL	
	GS	AVG	#	AVG	WS	AVG	#	AVG	ML	AVG	GM	AVG
1	6131	12631	61	12631	61	12631	61	12631	61	12631	61	12631
2	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
3	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
4	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
5	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
6	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
7	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
8	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
9	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
10	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
11	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
12	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
13	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
14	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
15	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
16	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
17	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
18	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
19	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341
20	1751	16131	11401	16131	1531	16131	191	16341	191	16341	191	16341

TABLE 21

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1983
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN										TOTAL	
	GS	WS	WS	WS	WS	WS	WS	WS	WS	WS	#	AVG
0	14	13650	2	2419	1	2455	1	2157	1	2157	8	4474
1	173	9419	729	14424	173	21131	23	15132	23	15132	960	14528
2	3177	10431	4057	15092	1931	21553	2321	16772	2321	16772	7589	13420
3	6055	11525	2631	14341	3811	22969	63	17947	63	17947	11000	12200
4	70417	13345	5243	12129	8961	24331	294	19431	294	19431	76538	13752
5	62311	15262	25364	18116	14751	24394	8931	20593	8931	20593	117044	16028
6	37032	17249	17429	10262	16191	25932	533	21391	533	21391	45756	18164
7	57829	18934	14717	20120	22831	25957	369	22645	369	22645	36946	19474
8	17518	31541	37520	27930	2993	27850	916	23029	916	23029	45025	21590
9	63981	22676	21835	22243	4172	20136	1385	24806	1385	24806	18585	98332
10	5574	26039	75077	23469	9176	29743	3520	25953	3520	25953	75306	92348
11	70223	27836	27572	46707	2396	31535	842	27223	842	27223	33695	105024
12	62627	33692	8070	25811	1363	27133	154	27004	154	27004	31136	92199
13	1375	47930	2931	26541	1453	31664	155	28559	155	28559	23714	40153
14	3319	45634	744	27301	970	36951	21	29283	21	29283	13057	67514
15	593	55238	28	26623	4121	36721	21	24895	21	24895	6396	55266
16	47	57229	1	26623	138	39731	1	26623	1	26623	185	43677
17	3	5754	1	26623	471	40519	1	26623	1	26623	50	41538
18	3	5754	1	26623	51	43649	1	26623	1	26623	8	47943
19	3	5754	1	26623	0	47633	1	26623	1	26623	6	41603
TOTAL	52130	21423	21423	21753	2534	20373	9434	24369	9434	24369	44018	86833

TABLE 22

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1984
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN												TOTAL	
	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	#	AVG
1	3	1361	10110	593	14480	97	21245	151	15692	-	-	-	831	16626
2	3032	17675	1722	15573	174	23178	219	16912	-	-	-	-	7187	13793
3	2942	13157	2113	15291	347	21815	42	18293	-	-	-	-	32270	12640
4	6283	13324	5253	17506	683	24379	275	20107	-	-	-	-	76168	14292
5	9311	15626	25874	19673	1575	25482	849	21273	-	-	-	-	121384	16573
6	57638	17957	17151	19313	1576	26677	530	21932	-	-	-	-	58965	18783
7	57774	19671	16677	20672	2290	27641	395	27186	-	-	-	-	75138	20128
8	10509	22378	31013	21512	3221	28697	930	24261	-	-	-	-	45523	22231
9	72225	23671	23671	22843	4170	30327	1324	25587	-	-	-	-	101414	23778
10	5582	21194	75014	24130	5187	39716	3531	26775	-	-	-	-	92334	25321
11	23623	23753	21953	25412	2325	32272	860	28013	-	-	-	-	108847	28143
12	26085	34934	7553	24351	1431	33242	146	27927	-	-	-	-	95153	34228
13	34094	42310	2927	27112	1927	34919	143	29182	-	-	-	-	44183	40559
14	3327	52324	715	28364	941	36383	19	30937	-	-	-	-	12793	43183
15	535	58354	25	27664	445	39457	4	29612	-	-	-	-	7562	57567
16	46	67272	-	-	140	40242	-	-	-	-	-	-	234	45323
17	3	67630	-	-	45	42863	-	-	-	-	-	-	51	44990
18	2	67630	-	-	3	44017	-	-	-	-	-	-	5	51130
TOTAL	60744	255371	255276	22344	29471	30231	9442	25091	45694	16680	88422	24218	51	51130

TABLE 23

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1985
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN												TOTAL
	GS	WS	MC	MS	WC	GM	AVG	#	AVG	#	AVG	#	
1	2	3134.5	5	2122.4	1	4.7	2133	1	2133	1	2133	1	2133
2	118	1715.3	4.7	1508.2	9	27.26	1622	9	1622	9	1622	9	1622
3	1024	1114.5	5.96	1620.1	176	23.07	1759.1	194	1759.1	194	1759.1	194	1759.1
4	2018.3	1252.1	25.45	1716.2	353	24.55	1874.5	521	1874.5	521	1874.5	521	1874.5
5	2039.4	1435.5	47.83	1835.5	873	25.43	2060.3	277	2060.3	277	2060.3	277	2060.3
6	9724.3	1635.9	267.63	1040.4	1453	26.07	2197.5	915	2197.5	915	2197.5	915	2197.5
7	38766	1852.4	1577	1052.4	1568	27.61	2274.3	522	2274.3	522	2274.3	522	2274.3
8	62366	2033.2	14563	2142.1	2060	28.87	2391.7	408	2391.7	408	2391.7	408	2391.7
9	10321	2335.9	31162	2229.6	3059	29.76	2514.8	991	2514.8	991	2514.8	991	2514.8
10	72677	24470	23536	2367.5	4172	31.15	2601.1	1350	2601.1	1350	2601.1	1350	2601.1
11	6273	27810	74831	2502.9	6406	32.59	2774.3	1629	2774.3	1629	2774.3	1629	2774.3
12	94537	2705.2	27073	2641.1	2115	33.27	2887.8	827	2887.8	827	2887.8	827	2887.8
13	82566	3535.9	7273	2722.8	1153	34.71	2898.5	150	2898.5	150	2898.5	150	2898.5
14	14132	4355.7	2793	2834.2	991	36.09	3046.6	143	3046.6	143	3046.6	143	3046.6
15	3053	5394	642	2853.7	1730	37.27	3187.1	19	3187.1	19	3187.1	19	3187.1
16	429	5923	28	2939.3	766	40.02	3303.9	21	3303.9	21	3303.9	21	3303.9
17	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
18	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
19	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
20	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
21	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
22	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
23	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
24	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
25	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
26	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
27	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
28	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
29	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
30	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
31	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
32	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
33	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
34	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
35	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
36	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
37	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
38	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
39	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
40	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
41	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
42	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
43	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
44	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
45	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
46	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
47	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
48	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
49	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
50	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
51	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
52	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
53	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
54	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
55	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
56	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
57	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
58	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
59	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
60	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
61	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
62	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
63	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
64	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
65	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
66	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
67	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
68	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
69	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
70	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
71	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
72	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
73	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
74	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
75	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
76	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
77	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
78	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
79	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
80	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
81	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
82	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
83	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
84	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
85	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
86	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
87	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
88	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
89	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
90	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
91	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
92	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
93	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
94	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
95	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
96	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
97	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
98	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
99	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371
100	41	5222	1	326	47.33	1	3371	1	3371	1	3371	1	3371

TABLE 24

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1986
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN												TOTAL	
	SS	MS	WS	W	GM	AVG	#	AVG	#	AVG	#	AVG	#	AVG
1	175	175	175	1	1	22714	1	49	1	15951	1	16676	3	16676
2	2262	11715	31701	1601	23254	230	17594	17594	230	17594	230	16771	5802	16771
3	25054	15039	22441	3351	24754	631	18943	18943	631	18943	631	13220	28113	13220
4	67833	14373	47641	19623	25056	293	20196	20196	293	20196	293	16788	73792	16788
5	94833	14352	25353	19558	26542	926	22104	22104	926	22104	926	17181	122619	17181
6	39379	19450	14627	20803	27983	526	22817	22817	526	22817	526	19435	58013	19435
7	62795	20288	14638	21725	29951	4181	24239	24239	4181	24239	4181	20801	79951	20801
8	10451	23978	30735	30381	29381	979	25475	25475	979	25475	979	23215	45371	23215
9	76454	24561	28243	23946	31473	1210	27052	27052	1210	27052	1210	24713	105053	24713
10	6394	27737	74014	25368	32679	3687	28278	28278	3687	28278	3687	26298	92284	26298
11	91514	29871	21931	24693	33814	815	29321	29321	815	29321	815	29285	116375	29285
12	95014	36153	72721	27378	34949	149	29444	29444	149	29444	149	35512	101523	35512
13	14325	43616	3743	23118	36392	139	31185	31185	139	31185	139	62232	462261	62232
14	3103	51721	674	2907	33713	20	31321	31321	20	31321	20	49599	207381	49599
15	413	45334	27	29544	40449	2	30639	30639	2	30639	2	58985	84391	58985
16	61	65651	1	4401	42411	1	501	501	1	501	1	44142	501	44142
17	3	65201	1	161	45212	1	144	144	1	144	1	45624	144	45624
18	2	65319	1	37	44756	1	39	39	1	39	1	49528	39	49528
19	1	1	1	1	1	1	1	1	1	1	1	23171	1	23171
TOTAL	54363	43921	242551	435171	511721	94321	26351	26351	94321	26351	94321	905536	25461	905536

TABLE 25

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1987
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

PAY PLAN																		
GRADE	GS		MS		US		GM		TOTAL									
	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG								
0	21	23554	21	19032	1	44501												
1	215	10733	463	15931	173	22444	21	17153										
2	2384	11942	2932	16582	151	2735	194	18042										
3	4367	13254	1959	17694	343	25339	58	19897										
4	6541	14954	4281	19963	851	26122	284	20594										
5	9561	16936	24922	20035	1412	27222	917	22662	1	61754								
6	40659	19133	15931	21254	1439	24615	513	23304	1	47132								
7	62458	20915	14532	22188	2088	29535	478	24857										
8	10561	23659	30941	23008	1002	30504	915	25852										
9	7782	25275	22956	24357	4033	32368	1158	27527	4	41920								
10	6330	25516	7271	25919	8232	33113	3805	28842										
11	94675	27277	21798	27198	2134	34319	813	29794										
12	95812	37181	6951	29120	1137	35458	1501	29834	5	35903								
13	16868	44076	2719	29391	816	37225	139	31663	29355	44226								
14	32421	53260	673	30308	1751	39238	151	32417	16392	52733								
15	4091	65539	27	30396	870	41139	21	31096	7596	62921								
16	631	6754			465	43135												
17	21	6820			140	45136												
18	21	6820			391	40393												
TOTAL	594051	24814	223781	239951	29071	52695	94481	268931	51364	496821	9094101							

TABLE 26

**AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1988
FOR ALL PERMANENT, FULL-TIME EMPLOYEES**

GRADE	PAY PLAN												TOTAL	
	GS	AVG	#	MS	AVG	#	WS	AVG	#	MC	AVG	#	GM	AVG
1	2	26256	1	221101	1	47674								4
2	174	30636	574	158461	175	29494								852
3	1613	32539	2963	14944	155	24024								4921
4	13936	33659	1357	178821	315	25744								21375
5	61265	35322	3892	19364	378	24796								66233
6	91637	37345	23497	205271	1376	27855								117435
7	41341	39542	14871	217321	1434	29261								58136
8	59298	41375	14652	227461	1971	30281								76323
9	10423	44213	28536	23571	2326	31195								42522
10	7679	45731	22468	24954	1878	32732								104266
11	5382	49353	70752	24384	8123	33737								88061
12	97344	31358	21205	27790	2126	35346								121477
13	95579	37935	6795	28741	1088	35896								106619
14	15426	45422	2624	20996	780	37957								49681
15	3465	54080	658	30845	1759	39996								53804
16	423	64512	20	31107	865	41953								9398
17	62	70756			498	44022								540
18	6	72530			146	47897								142
19	2	7352			37	49715								33
TOTAL	521151	457351	211521	445061	224651	34671	91771	274921	557391	504021	8904361	27284		

TABLE 27

AVERAGE SALARY AND NUMBER OF DOD EMPLOYEES BY GRADE IN 1989
FOR ALL PERMANENT, FULL-TIME EMPLOYEES

GRADE	PAY PLAN										TOTAL	
	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG	#	AVG
1	255	17,823	513	15,653	123	22,213	21	17,212	-	-	908	15,204
2	1553	18,564	3269	17,369	147	24,564	174	18,433	-	-	4445	16,129
3	17293	16,133	18171	19,259	5051	24,603	521	22,373	-	-	19460	14,779
4	61547	15,947	33251	20,054	7731	27,871	2511	21,362	-	-	66136	14,328
5	94181	13,171	22649	20,930	12821	24,311	882	23,603	-	-	118994	18,512
6	430221	20,343	142571	22,391	13951	30,332	4761	24,689	-	-	591501	21,099
7	61394	22,339	14082	23,76	1914	31,369	5731	26,287	-	-	77963	22,744
8	10460	25,176	27436	24,108	2737	32,951	7301	27,205	-	-	41351	24,981
9	7547	26,896	21559	27,735	3723	37,741	1102	28,888	-	-	101780	26,914
10	6337	30,626	63571	27,150	7455	34,774	3562	30,229	-	-	84721	28,194
11	167279	30,634	22233	28,690	20659	34,933	7591	31,342	-	-	123260	32,339
12	164723	30,466	2749	29,54	3722	36,913	1501	31,513	-	-	112645	38,523
13	16754	42,070	2447	30,854	7281	38,959	1541	33,891	32746	46,850	52849	46,334
14	3812	55,93	633	33,979	1591	40,953	17	34,265	18235	55,750	24200	56,187
15	425	66,715	141	24,223	778	43,750	21	33,459	8597	67,023	10113	66,618
16	35	73,917	-	-	442	45,339	-	-	-	-	477	47,620
17	4	75,201	-	-	141	40,226	-	-	-	-	144	48,983
18	2	75,501	-	-	70	51,115	-	-	-	-	30	52,598
TOTAL	597420	40,730	246130	42,244	56491	34,747	9860	29,286	50570	52,515	898721	25,516

APPENDIX B

TABLE 28 DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1974 FOR OFFICERS AND ENLISTEES BY GRADE

	6PT	8AQ	8AS	ALL	CPV	SST	FIT	TOT	D15	TAD	RWC
C-3	36006.00	3646.80	606.24	4233.04	40233.04	772.20	6010.00	9282.20	20910.84	3206.00	43461.04
C-10	36006.00	3603.61	606.24	4210.05	40210.05	772.20	6040.96	9435.16	20776.90	3224.09	43444.14
C-9	36006.00	3609.73	606.24	4215.97	40215.97	772.20	6054.28	9476.48	20776.90	3248.66	43464.63
C-8	36006.00	3633.23	606.24	4236.47	40236.47	772.20	6059.40	9311.60	20924.87	3212.02	43480.54
C-7	31384.60	3632.16	606.24	3636.40	30436.40	772.20	5743.20	7645.20	24236.00	2774.81	39378.01
C-6	26613.12	3248.70	606.24	3636.94	30436.94	772.20	4949.22	5721.42	24746.64	2054.78	32324.84
C-5	21480.40	3060.71	606.24	3565.95	29097.35	772.20	3077.46	4149.66	20847.70	1491.73	26599.10
C-4	14317.87	2837.24	606.24	3303.46	20721.16	772.20	2412.18	3164.38	17536.72	1126.36	21827.81
C-3	14105.74	2403.86	606.24	3010.10	17115.84	770.08	1846.08	2816.14	14499.70	932.49	16069.32
C-2	11083.68	8072.46	606.24	2676.70	17742.38	847.23	1426.00	2073.22	11669.16	693.84	14496.22
C-1	7982.80	1833.43	606.24	2188.89	10162.30	665.83	923.04	1390.88	8721.63	514.53	10877.04
C-3 E	16408.77	2403.86	606.24	3010.12	18415.89	772.20	2376.74	3151.94	16283.94	1037.39	20473.29
C-2 E	13566.28	2072.60	606.24	2676.64	16244.13	763.77	1918.12	2692.69	13561.24	886.55	17112.68
C-1 E	10658.08	1394.16	606.24	2200.40	13039.47	633.28	1472.63	2112.28	10847.13	539.08	13818.09
ALL-O-3	14347.64	2403.86	606.24	3010.10	17357.94	770.26	1902.26	2872.54	14685.40	983.32	16321.46
ALL-O-2	11254.72	2072.47	606.24	2676.71	13633.43	856.13	1463.65	2119.76	11813.65	707.18	14840.61
ALL-O-1	8077.78	1582.68	606.24	2193.72	10227.31	472.35	946.93	1413.50	8258.01	516.33	10793.83
ALL-O	13246.26	2423.72	606.24	3029.96	16276.24	712.47	2176.43	2886.90	15347.34	1034.14	18310.38
V-4	16107.08	2607.22	606.24	3213.46	18810.88	772.20	2224.43	2996.69	16813.87	1081.81	20892.37
V-3	13743.49	2406.26	606.24	3012.52	16756.01	765.84	1519.42	2280.06	14470.93	871.11	17627.12
V-2	10936.07	2160.26	606.24	2766.00	13744.07	641.05	1047.05	1688.10	12058.47	635.61	14380.18
V-1	8277.25	1843.14	606.24	2489.58	11766.63	542.72	993.03	1536.75	10220.84	563.82	12320.06
ALL-WO	12209.30	2236.86	606.24	2865.20	15074.70	662.82	1506.66	1991.60	13083.20	746.07	15820.77
ALL-WF	15006.18	2413.41	606.24	3018.63	18075.83	710.62	2122.11	2852.73	15243.11	1016.11	18081.84
P-3	16223.20	2312.80	679.65	3212.45	21435.65	772.20	2639.93	3431.75	16003.90	1148.22	23344.88
C-9	13968.33	2310.26	679.65	3018.43	21435.65	772.20	1807.13	2373.64	14002.78	942.06	19116.53
E-6	11631.31	2156.85	679.65	3038.62	14696.12	680.86	1172.48	1803.10	12642.97	746.16	15441.28
E-7	8841.22	2014.06	679.65	2883.73	12734.97	575.71	976.23	1451.90	11283.00	580.42	13323.52
E-6	8185.03	1843.66	679.65	2753.65	10946.97	478.41	642.98	1122.39	8768.16	542.04	11460.61
E-5	6883.24	1627.67	679.65	2607.82	8066.76	383.38	497.19	680.66	6180.20	343.41	9606.17
E-4	5078.44	1276.52	679.65	2158.17	8226.61	353.12	392.97	517.69	7308.92	322.79	8749.40
E-3	5284.74	1276.06	679.65	2158.21	7440.83	309.16	424.34	733.69	6707.23	483.90	7856.85
ALL-E	6419.76	1276.86	679.65	2156.20	7575.85	317.08	448.28	765.31	6610.64	500.32	8078.47
E-3	4933.06	1031.92	679.65	1930.69	6864.94	286.63	407.76	696.38	6168.15	446.19	7312.79
E-2	4608.80	844.36	679.65	1824.61	6425.41	268.10	368.60	634.76	5780.64	416.90	6844.21
E-1	4129.30	675.64	679.65	1765.28	5644.49	241.56	292.00	633.56	5350.93	393.12	6277.61
ALL-EN	8140.62	1366.42	679.65	2248.07	8769.99	359.61	601.21	860.02	7526.87	498.61	8869.30
ALL-DO	7376.88	1513.32	841.74	2350.06	9731.94	407.60	720.97	1133.06	6994.37	571.23	10003.17

TABLE 29

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1975
FOR OFFICERS AND ENLISTEES BY GRADE

	BPY	BAG	BAS	ALL	CPY	SST	FIT	TOY	DIS	TAD	PRC
C-5	37800.00	3630.40	636.60	4187.00	2267.00	824.85	898.30	3624.75	3242.65	3526.19	45782.19
C-10	37800.00	3600.44	636.60	4143.04	2243.04	824.85	898.09	3678.94	3204.08	3536.74	45779.78
C-9	37800.00	3605.86	636.60	4142.46	2242.48	824.85	901.68	3641.21	3240.12	3526.30	45786.76
C-8	37700.80	3619.60	636.60	4156.40	2247.23	824.85	873.34	3675.19	3267.24	3458.91	45704.14
C-7	33131.60	3188.46	636.60	4155.06	37830.86	824.85	680.96	7710.71	2885.95	2957.31	40353.97
C-6	27598.60	3368.70	636.60	4025.30	31623.90	824.85	5105.69	6930.54	26593.30	2214.09	32637.89
C-5	22508.46	3131.05	636.60	3767.65	26210.11	824.85	3541.31	4368.15	21908.90	1620.12	27890.23
C-4	19322.57	2614.44	636.60	3461.04	21773.81	824.79	2833.76	3358.64	16416.08	1248.61	23020.22
C-3	14814.13	2021.49	636.60	3188.09	17972.22	820.08	1925.08	2745.16	16227.07	956.31	18926.54
C-2	11603.98	2179.79	636.60	2616.39	14420.38	678.63	1478.66	2106.70	12261.68	700.02	15120.40
C-1	8399.78	1692.94	636.60	2299.54	10699.33	491.39	937.51	1426.90	9270.43	594.59	11283.92
C-3 E	17296.76	2521.43	636.60	3188.03	20414.81	824.82	2456.10	3280.92	17133.89	1128.90	21544.71
C-2 E	14192.24	2179.72	636.60	2616.32	16998.58	608.68	1988.66	2795.12	14203.44	857.25	17865.81
C-1 E	11314.71	1662.30	636.60	2298.90	10813.61	661.91	1540.09	2202.00	11411.01	563.22	14196.83
ALLO-3	15088.77	2521.49	636.60	3188.09	16277.85	820.68	1940.66	2801.22	18428.63	974.48	19202.33
ALLO-2	11812.34	2179.78	636.60	2616.38	14828.72	689.32	1520.81	2210.13	12418.60	712.73	15341.48
ALLO-1	8568.52	1692.90	636.60	2299.50	10868.02	801.28	972.39	1473.63	9394.37	593.93	11461.95
ALL CO	16120.86	2551.29	636.60	3167.69	19308.66	763.72	2285.92	3049.04	16269.23	9.93	20408.80
M-4	17489.82	2722.25	636.60	3356.65	20628.68	824.85	2324.83	3149.48	17679.21	1.21	21992.42
M-3	14316.81	2514.38	636.60	3150.96	17466.77	811.65	1630.17	2441.52	15024.96	18323.09	18323.09
M-2	11372.34	2270.34	636.60	2906.94	14278.26	680.28	1116.93	1782.22	12487.07	14830.10	14830.10
M-1	10028.63	2095.46	636.60	2732.08	12760.71	686.67	879.66	1466.33	11294.58	1.71	71.06
ALL US	12838.68	2360.43	636.60	2997.05	18835.81	712.67	1351.11	2665.76	15571.83	755.78	16381.56
ALLOFF	15904.62	2639.44	636.60	3176.04	19080.66	760.56	2227.64	2888.38	16092.26	1078.05	20158.20
R/3	19134.00	2446.00	923.46	3371.45	22508.46	824.85	2737.25	3662.10	18943.35	1224.00	23729.45
E-9	14677.78	2420.26	923.46	3343.71	16021.47	815.16	1671.04	2486.22	16530.26	934.46	18965.93
E-8	12167.60	2263.90	923.46	3177.35	16345.18	711.62	1222.93	1934.76	13410.40	710.93	16056.07
E-7	10306.31	2099.06	923.46	3022.53	13327.84	602.68	888.48	1409.34	11838.50	683.65	13991.48
E-6	8535.82	1928.54	923.46	2878.78	11583.82	499.23	608.27	1107.66	10278.12	649.66	12633.87
E-5	6843.81	1693.60	923.46	2619.28	9462.86	400.38	458.63	855.66	8606.88	596.01	10060.88
E-4	6377.31	1531.46	923.46	2254.93	6632.23	373.07	598.01	912.09	7720.15	551.23	9183.46
E-3	5518.14	1331.20	923.46	2254.65	7770.79	322.88	380.22	712.92	7057.87	510.73	8281.61
ALLE-4	5719.36	1331.27	923.46	2284.72	7974.07	334.58	426.34	759.92	7214.15	520.28	8484.38
E-3	5190.67	1082.20	923.46	2018.71	7208.98	303.80	381.12	694.77	6511.60	466.80	7673.12
E-2	4831.20	959.64	923.46	1862.96	6714.19	282.03	358.92	636.55	6078.84	438.27	7143.43
E-1	4334.40	890.96	923.46	1814.41	8148.81	253.56	278.17	629.73	6819.00	409.14	6007.95
ALLEML	6423.02	1416.67	923.46	2340.32	6703.34	375.42	480.13	955.65	7907.79	536.14	9299.48
ALLDGO	7714.33	1809.78	684.38	2454.13	10186.47	427.87	718.18	1146.03	9022.44	610.01	10778.48

TABLE 30

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1976
FOR OFFICERS AND ENLISTEES BY GRADE

	BPY	BAQ	BAS	ALL	CPY	SSY	FIT	TOT	D19	TAD	RMC
0-3	39600.00	4456.60	887.32	5124.12	44724.12	965.25	9486.00	10453.25	34270.67	4328.10	49032.22
0-10	39600.00	4450.60	887.32	5124.12	44724.12	965.25	9519.53	10488.80	34239.32	4336.61	49000.73
0-6	39600.00	4442.40	887.32	5109.72	44709.72	966.25	9480.90	10470.15	34263.67	4316.82	49028.24
0-9	39400.00	4441.92	887.32	5109.24	44694.28	966.25	9300.91	10265.88	34326.42	4272.15	48865.44
0-7	34340.40	4445.08	887.32	5116.41	39438.81	965.25	7106.99	6074.24	31362.67	3082.25	43039.08
0-8	28808.92	3908.43	887.32	4575.75	33163.08	965.25	5114.06	6080.10	27106.57	2604.04	35789.72
0-5	23323.24	3568.63	887.32	4236.85	27659.08	965.19	3016.08	4481.27	23077.82	1891.01	29480.10
0-4	18972.75	3191.20	887.32	3836.52	22803.28	963.01	2452.90	3415.99	19416.30	1417.31	24249.59
0-3	15447.65	2626.66	887.32	3498.18	18943.83	896.86	1880.88	2779.74	18164.09	1075.75	20019.58
0-2	12136.49	2418.16	887.32	3085.48	15221.97	709.99	1384.01	2104.00	13117.97	784.93	16006.90
0-1	8664.09	1846.62	887.32	2816.14	11200.23	508.02	842.65	1350.67	9849.36	601.47	11801.70
0-3 E	17920.91	2826.65	887.32	3490.17	21417.04	984.48	2412.12	3376.81	18040.47	1281.89	22708.66
0-2 E	14856.03	2418.12	887.32	3085.44	17840.47	881.47	1871.37	2722.84	14917.63	935.88	19576.05
0-1 E	11621.60	1848.74	887.32	2816.08	14137.67	679.67	1412.49	2092.35	12045.52	643.22	14761.09
ALLO-3	16716.98	2626.66	887.32	3490.16	19212.15	905.97	1938.52	2844.49	16387.88	1038.17	20311.32
ALLO-2	12388.45	2418.16	887.32	3085.47	15450.91	723.36	1438.20	2162.88	13268.33	788.19	16290.10
ALLO-1	8843.67	1846.62	887.32	2516.14	11359.60	517.38	873.79	1391.14	9368.08	603.73	11863.84
ALL CO	18932.97	2685.95	887.32	3653.27	20360.24	856.41	2244.14	3100.65	17286.69	1256.06	21642.30
W-4	18186.78	3066.92	887.32	3736.24	21895.02	964.42	2277.00	3241.42	18853.60	1324.05	23229.08
W-3	14881.60	2603.68	887.32	3471.30	18432.81	876.26	1525.22	2470.47	15062.34	982.30	19095.11
W-2	11679.01	2520.26	887.32	3167.58	15065.89	694.82	1032.23	1727.15	13338.44	723.76	15790.38
W-1	10423.18	2312.16	887.32	2878.60	13402.68	608.78	795.45	1405.20	11897.48	672.46	14078.15
ALL W5	13547.88	2630.38	887.32	3387.71	16845.68	767.68	1316.66	2084.11	14568.58	882.26	17611.90
ALLOFF	18817.48	2670.79	887.32	3536.11	20155.88	800.83	2186.68	3037.81	17117.78	1231.75	21387.24
W-5	19828.20	2743.20	887.28	3710.45	23538.88	968.28	2660.05	3636.30	18880.35	1385.86	24921.63
E-9	15180.93	2717.97	887.23	3685.22	18866.15	886.09	1864.67	2472.95	16393.19	1025.95	19892.09
E-6	12838.67	2617.10	887.28	3484.35	16121.22	739.26	1117.97	1857.23	14263.98	783.71	16814.93
E-7	10897.43	2282.40	887.23	3286.65	13957.08	628.80	810.21	1436.01	12621.07	732.45	14669.53
E-8	8870.42	2114.23	887.23	3081.68	11892.10	518.41	602.36	1017.76	10874.34	633.73	12485.88
E-6	7097.93	1868.08	887.23	2852.34	9949.67	418.21	300.78	715.98	9233.89	670.89	10620.88
E-4 +4	6833.17	1480.86	887.23	2448.21	9281.38	386.04	427.39	815.44	9288.94	690.14	9671.52
E-4 -4	5747.39	1480.87	887.23	2448.22	8195.71	338.23	264.04	600.28	7886.27	577.42	8773.13
ALLE-4	5980.73	1480.87	887.23	2446.22	8408.94	348.70	303.37	652.07	7706.88	660.49	8989.43
E-3	5338.94	1226.63	887.23	2194.10	7534.04	312.39	280.33	592.72	6941.32	496.48	8030.82
E-2	5007.80	1051.34	887.23	2018.59	7026.19	287.92	267.67	560.61	6446.37	441.08	7487.27
E-1	4482.80	990.46	887.23	1937.71	6430.61	262.63	212.71	475.04	6974.97	410.15	6860.66
ALLENL	6851.44	1571.33	887.28	2536.58	9190.02	348.11	370.30	759.41	9430.60	681.24	9771.26
ALLDOD	7986.10	1745.36	927.08	2672.44	10658.83	400.96	613.56	1064.54	9994.00	688.36	11328.88

TABLE 31

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1977
FOR OFFICERS AND ENLISTEES BY GRADE

	BPY	BAQ	BAS	ALL	CPY	SST	FIT	TOT	DIS	TAD	RMC
C-3	47498.40	5090.40	714.36	5804.76	53303.16	965.25	12871.27	18806.48	39466.88	6720.69	59023.85
O-10	47498.40	5090.40	714.36	5804.76	53303.16	965.25	12871.27	18806.48	39466.88	6720.69	59023.85
O-9	45643.94	5081.69	714.36	5796.05	51419.99	965.25	11936.83	17407.08	38337.91	5580.31	57023.50
O-8	41932.38	5073.42	714.36	5788.78	47222.17	965.25	10169.11	13134.36	36587.81	5180.96	52918.13
O-7	36488.00	5079.58	714.36	5793.94	42261.94	965.25	7700.33	8745.58	33510.36	4367.75	46629.69
O-6	30334.87	4406.98	714.36	5723.34	35477.91	965.25	5840.26	6005.51	28872.40	3150.56	38628.47
O-5	24731.87	4016.34	714.36	4730.70	28462.57	965.25	3790.27	4763.52	24688.04	2236.64	31719.20
O-4	20284.82	3829.11	714.36	4284.47	24489.39	965.25	2632.43	3637.65	20851.74	1670.81	26160.30
O-3	16463.11	3164.71	714.36	3879.07	20342.19	941.24	1968.87	2910.11	17432.07	1307.24	21679.43
O-2	12904.76	2686.93	714.36	3411.33	16316.11	754.93	1418.43	2173.36	14142.76	1050.83	17366.94
O-1	8284.53	2033.80	714.36	2788.26	12032.81	541.98	812.60	1334.66	10678.15	695.52	12728.13
O-3 E	19081.68	3164.78	714.36	3879.14	22960.81	965.23	2610.62	3575.85	19384.96	1485.85	24456.66
O-2 E	15461.41	2697.28	714.36	3411.64	18870.05	904.49	1990.65	2898.14	15974.92	1203.87	20078.93
O-1 E	12337.00	2033.77	714.36	2768.13	15103.13	721.71	1428.89	2150.60	12934.53	858.26	15963.39
ALL O-3	16737.07	3104.72	714.36	3879.08	20616.15	943.75	2036.01	2979.70	17636.38	1353.83	21969.98
ALL O-2	13154.93	2697.02	714.36	3411.38	16366.31	769.56	1474.72	2244.28	14322.03	1065.80	17632.11
ALL O-1	8488.19	2053.89	714.36	2760.23	12256.44	553.88	853.54	1415.18	10851.23	707.80	12978.34
ALL O	17828.30	3216.03	714.36	3932.39	21761.70	877.53	2378.64	3256.17	18508.53	1518.15	23279.84
W-4	19031.38	3444.84	714.36	4159.30	23190.88	965.11	2373.65	3330.76	19851.92	1532.80	24723.84
W-3	15530.15	3116.80	714.36	3833.26	19363.41	906.12	1580.72	2406.84	16876.57	1210.77	20374.18
W-2	12824.78	2781.42	714.36	3505.78	16130.86	738.53	996.51	1735.08	14393.50	938.05	17066.81
W-1	11042.98	2558.79	714.36	3274.15	14317.11	646.01	728.20	1370.21	12946.90	797.65	15114.76
ALL W	13698.25	2929.63	714.36	3843.99	17640.24	799.48	1290.11	2089.60	17030.64	1056.27	18706.47
ALL OFF	17592.30	3200.20	714.36	3914.56	21806.88	872.70	2311.34	3184.04	18322.82	1490.20	22897.06
N-5	21032.80	3067.20	1036.60	4103.80	25156.60	965.25	2889.60	3854.80	21301.76	1616.89	26773.19
E-9	16152.25	3038.10	1036.60	4074.70	20226.85	927.14	1633.64	2560.78	17688.17	1294.06	21521.01
E-8	13388.13	2802.89	1036.60	3839.19	17207.33	782.04	1037.91	1839.94	15367.38	1049.67	18257.00
E-7	11327.38	2587.97	1036.60	3624.27	14952.25	662.99	691.83	1334.24	13588.01	886.94	15839.19
E-6	9308.96	2344.67	1036.60	3381.27	12690.23	644.57	411.52	966.09	11734.13	753.20	13443.42
E-5	7526.22	2068.60	1036.60	3093.20	10620.42	440.23	259.41	699.64	9920.78	675.21	11295.63
E-4	7038.73	1828.87	1036.60	2665.47	9704.21	411.76	381.28	792.04	8811.77	618.16	10319.32
E-4 -4	8101.63	1828.87	1036.60	2665.47	8767.10	356.95	223.21	580.15	8186.94	580.79	9347.89
ALL E-4	6388.88	1828.87	1036.60	2665.47	9024.12	372.57	268.25	640.81	8393.31	590.59	9624.71
E-3	5662.40	1333.78	1036.60	2370.38	6032.78	331.25	263.98	595.23	7437.53	503.80	8538.58
E-2	5317.20	1168.85	1008.60	2145.02	7522.45	311.06	255.46	566.52	6935.92	463.27	7985.72
E-1	4770.00	1108.42	1036.60	2145.02	6915.02	279.05	184.27	463.32	6481.70	423.38	7338.40
ALL ENL	7049.87	1729.83	1036.60	2766.23	9815.11	412.23	325.18	738.40	8076.70	612.57	10427.68
ALL DOO	8452.32	1928.38	993.71	2819.09	11371.41	473.52	590.42	1063.95	10307.46	729.40	12100.81

TABLE 32

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1978
FOR OFFICERS AND ENLISTEES BY GRADE

	BPY	BAO	BAS	ALL	CPY	3ST	FIT	TOT	DJS	TAO	PMC
C/S	47496.40	3371.20	783.80	6124.60	53823.20	1070.85	12671.23	13672.08	38881.12	6040.73	89683.93
O-10	47496.40	3371.20	783.80	6124.60	53823.20	1070.85	12671.23	13672.08	38881.12	6040.73	89683.93
O-9	47496.40	3371.20	783.80	6124.60	53823.20	1070.85	12671.23	13672.08	38881.12	6040.73	89683.93
O-8	44239.13	3392.86	783.80	6116.46	50353.28	1070.85	11181.37	12322.24	38123.37	5278.42	85132.01
O-7	38473.20	3391.45	783.80	6116.46	44666.20	1070.85	8571.84	9642.69	34946.66	4864.94	69552.79
O-6	31869.85	4058.69	783.80	6412.49	37402.94	1070.85	8208.83	7279.86	30122.68	3342.61	40944.95
O-5	26019.17	4243.27	783.80	4990.67	31013.04	1070.85	4176.44	8246.28	25786.76	2645.82	33586.68
O-4	21281.83	3769.87	733.60	4323.17	25810.00	1070.85	2860.36	4030.81	21764.08	1863.11	27660.11
O-3	17363.66	3321.09	783.80	4074.69	21426.95	1031.63	2226.16	3736.81	18171.54	1492.40	22920.74
O-2	13362.80	2837.36	783.80	3590.96	16943.78	807.86	1526.71	2334.68	14606.20	1144.52	18086.28
O-1	9858.89	2189.14	733.60	2913.74	12882.93	584.57	889.39	1460.38	11102.27	706.86	13335.48
O-3 E	20093.06	3321.10	783.80	4074.70	24167.76	1070.78	2926.14	3996.92	20171.83	1676.93	25644.69
O-2 E	16287.10	2837.33	783.80	3590.83	19877.73	806.37	2207.06	3192.42	16689.31	1356.60	21214.83
O-1 E	13131.76	2189.22	733.60	2913.62	18049.80	784.47	1610.65	2408.33	13640.27	938.37	17084.97
ALLO-3	17636.21	3321.09	783.80	4074.69	21709.90	1036.66	2287.12	3332.78	18377.12	1811.36	23221.26
ALLO-2	13888.69	2837.32	783.80	3590.92	17280.61	827.01	1800.16	2427.17	14833.34	1165.28	18425.79
ALLO-1	99219.07	2189.18	733.60	2913.76	12931.82	606.08	867.83	1823.63	11388.19	777.28	13703.10
ALL C/S	16702.07	3360.90	783.80	4134.50	22836.58	961.91	2630.81	3592.82	18244.04	1889.23	24029.80
W-4	20111.28	3242.61	783.80	4398.41	24897.89	1070.43	2623.73	3634.18	20813.83	1688.82	28203.31
W-3	16736.31	3305.86	783.80	4059.26	19744.67	960.84	1822.23	2873.07	17221.80	1293.11	21087.69
W-2	13586.51	2862.69	783.80	3716.59	17283.00	820.77	1164.82	1986.36	18297.71	1045.84	18328.94
W-1	11841.71	2714.76	783.80	3466.36	15110.09	704.32	626.62	1829.94	13680.13	872.83	18982.70
ALL W/O	14886.08	3097.99	783.80	3851.89	16618.88	667.01	1416.75	2263.78	16230.83	1165.39	19682.67
ALLOFF	18443.48	3382.77	783.80	4118.37	22809.82	968.63	2552.88	3508.81	19081.01	1856.71	24210.84
M/3	22212.00	3236.40	1085.00	4331.40	26643.40	1070.66	3193.90	4264.76	22276.66	1817.64	28381.04
E-8	18773.43	3194.16	1085.00	4269.16	21082.55	1004.60	1802.80	2807.10	18286.46	1418.28	22481.88
E-6	14182.08	2945.66	1085.00	4040.55	18192.82	888.20	1234.20	2090.40	18102.22	1170.08	19382.70
E-7	11928.85	2726.01	1085.00	3821.01	15747.66	721.06	608.10	1828.58	14221.18	873.64	18221.80
E-8	9761.78	2459.81	1085.00	3534.81	13306.87	588.98	510.07	1100.02	12208.06	618.61	14124.88
E-8	7882.12	2174.83	1085.00	3269.63	11221.93	481.10	330.46	819.66	10402.40	719.43	11941.37
E-4 +4	7409.73	1739.42	1085.00	2834.42	10214.58	448.28	432.74	881.03	9383.11	561.82	10908.02
E-4 -4	6421.07	1739.41	1085.00	2834.41	9235.48	388.47	281.84	840.12	8813.38	543.85	9889.43
ALLE-4	6882.23	1739.41	1085.00	2834.41	9488.64	403.07	289.82	598.88	8787.78	648.32	10144.98
E-3	5981.22	1421.89	1085.00	2518.65	8488.97	381.84	306.13	588.00	7830.08	548.08	9048.14
E-2	8808.80	1262.74	1085.00	2357.74	7968.84	339.33	288.82	520.15	7340.39	502.86	8469.42
E-1	8032.80	1183.63	1085.00	2246.63	7281.43	304.48	230.73	536.21	6746.22	463.97	7743.40
ALLEM	7441.06	1639.48	1085.00	2934.46	10375.53	489.11	388.81	837.02	9538.51	558.00	11043.53
ALLDDO	8911.78	2043.09	1049.36	3092.45	12004.21	517.71	876.45	1194.16	10810.06	800.03	12804.24

TABLE 33

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1979
FOR OFFICERS AND ENLISTEES BY GRADE

	BPV	BAO	BA3	ALL	CPV	SST	FIT	TOT	DIS	TAD	RMC
C-9	50112.00	5749.20	808.82	5353.72	58687.72	1403.77	13273.14	14670.91	41990.61	6290.17	62937.90
O-10	50112.00	5749.20	808.82	5353.72	58687.72	1403.77	13446.81	14850.28	41817.44	6298.34	62966.08
O-9	50112.00	5736.93	808.82	5340.45	58557.18	1403.77	13216.40	14620.17	42038.98	6272.57	62928.72
O-8	47348.78	5740.47	808.82	5348.98	53930.78	1403.77	11634.87	13238.44	40838.34	6043.20	59839.98
O-7	41173.20	5738.76	808.82	5340.30	47716.00	1403.77	9123.72	10527.49	37191.02	5303.00	53024.40
O-6	34300.96	5630.24	808.82	5308.76	40118.72	1403.77	6457.42	7861.19	32358.93	3848.18	43981.87
O-5	27839.97	4531.04	808.82	5337.56	33177.02	1403.77	4414.08	5017.78	27359.70	2669.12	35940.64
O-4	22612.80	4034.60	808.82	4841.32	27853.97	1383.94	3130.74	4494.68	23188.29	1853.47	24608.48
O-3	18638.05	3551.52	808.82	4358.04	23014.08	1143.62	2383.84	3527.48	19486.63	1538.70	24552.80
O-2	14354.43	2972.66	808.82	3779.16	18133.60	879.92	1731.18	2611.08	15622.93	1223.46	19367.07
O-1	10372.54	2307.12	808.82	3113.04	13488.18	635.84	872.20	1608.04	11878.14	808.14	14281.32
O-3 E	21447.10	3561.62	808.82	4358.14	23608.24	1314.71	3073.82	4388.22	21417.02	1748.14	27531.38
O-2 E	17588.98	2972.66	808.82	3779.07	21145.08	1084.72	2438.10	3500.82	17647.23	1421.85	22569.90
O-1 E	14014.88	2308.87	808.82	3112.49	17128.08	809.08	1721.63	2380.74	14847.34	958.29	18127.37
ALLO-3	18638.70	3551.52	808.82	4358.05	23297.78	1181.00	2483.93	3614.94	19682.81	1589.78	24857.93
ALLO-2	14888.01	2972.66	808.82	3779.17	18488.88	900.28	1808.81	2709.08	18768.89	1248.32	19711.00
ALLO-1	10780.35	2307.12	808.82	3113.52	13893.88	681.48	1058.18	1719.53	12184.35	827.42	14731.40
ALL CO	19598.06	3583.52	808.82	4390.04	24288.10	1131.83	2778.80	3908.89	20379.82	1789.79	26047.90
W-4	21489.78	3878.52	808.82	4888.04	26154.83	1316.10	2843.82	4139.32	21980.31	1789.53	27843.18
W-3	18930.31	3521.34	808.82	4327.86	21238.17	1037.83	1882.20	2900.03	18338.14	1344.83	22602.98
W-2	14870.32	3188.18	808.82	3884.67	16538.00	893.16	1344.67	2237.83	16287.17	1062.19	19617.18
W-1	12182.14	2678.81	808.82	3883.03	10848.17	740.54	958.62	1702.18	14143.01	812.30	16787.47
ALL W0	19672.98	3298.02	808.82	4104.94	19777.50	980.78	1608.62	2569.28	17208.22	1213.81	20991.11
ALLOFF	19828.88	3688.31	808.82	4371.83	24000.48	1120.73	2702.46	3823.18	20177.30	1724.97	26725.48
M-9	23770.80	3483.20	1171.68	4634.85	28405.80	1403.77	3311.40	4718.19	23890.48	1898.12	30304.77
E-9	18278.58	3422.68	1171.68	4894.24	23873.78	1120.84	1982.84	3083.07	19790.71	1446.27	24320.08
E-8	15188.30	3146.30	1171.68	4317.88	18467.24	929.88	1345.77	2278.85	17211.88	1178.84	20687.18
E-7	12772.03	2911.49	1171.68	4093.14	15853.17	782.92	917.82	1700.33	15132.88	895.14	17848.91
E-6	10476.69	2641.87	1171.68	3813.52	14289.40	642.17	864.32	1226.48	13082.92	868.24	16154.84
E-5	8483.68	2313.64	1171.68	3488.48	11878.79	520.88	338.72	858.38	11118.79	858.18	12837.32
E-4	7816.42	1824.36	1171.68	2988.01	10811.42	489.22	481.81	866.73	9844.70	797.27	11548.70
E-4 -4	8944.83	1824.35	1171.68	2986.00	9940.63	425.72	308.20	728.91	9214.81	728.49	10867.31
ALLE-4	7207.00	1824.36	1171.68	2986.00	10203.00	441.78	349.17	790.96	9412.04	729.40	10852.40
E-3	6437.07	1481.66	1171.68	2693.21	9080.18	384.88	358.20	752.78	8337.80	616.05	9706.34
E-2	6001.20	1288.27	1171.68	2457.92	8469.12	387.87	344.26	712.13	7748.98	556.82	9016.03
E-1	6385.60	1201.27	1171.68	2373.92	7758.82	330.14	263.24	693.38	7168.14	517.88	8278.40
ALLEN	8005.31	1848.48	1171.68	3117.10	11122.40	480.72	437.65	928.38	10194.93	743.37	11663.78
ALLDD	8078.01	2184.62	1122.28	3286.87	12864.88	578.97	744.09	1320.86	11844.82	876.19	13741.07

TABLE 34

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1980
FOR OFFICERS AND ENLISTEES BY GRADE

	BPY	6A0	6AS	ALL	CPY	33T	FIT	TOT	D13	TAD	RPC
O-3	50112.00	6422.40	980.96	7413.36	67325.36	1587.67	13273.14	14860.81	42664.50	7136.62	64662.18
O-10	50112.00	6422.40	980.96	7413.36	67325.36	1587.67	13273.14	14860.81	42664.50	7134.15	64659.51
O-9	50112.00	6416.72	980.96	7408.68	67268.68	1587.67	13245.00	14832.67	42600.97	7118.61	64632.18
O-8	50112.00	6410.08	980.96	7403.04	67212.08	1587.67	12934.34	14542.01	42378.68	7095.73	64614.41
O-7	48990.00	6406.28	980.96	7398.22	65388.22	1587.67	11101.61	12669.48	40698.74	6661.71	60090.93
O-6	38262.87	6399.38	980.96	6380.34	44863.21	1587.67	7950.70	9438.37	35424.83	4926.03	49788.24
O-5	30940.93	6072.62	980.96	6063.48	37004.41	1586.25	5282.00	6878.24	30128.17	3812.87	40316.98
O-4	25434.61	4306.33	980.96	5497.29	30831.91	1530.64	3795.61	5327.06	25904.69	3323.77	33497.87
O-3	20616.24	3953.02	980.96	4943.98	25769.23	1276.96	2916.12	4182.09	21067.13	1976.77	27730.00
O-2	16090.41	3309.34	980.96	4297.30	20387.71	986.34	2145.44	3131.78	17258.93	1554.83	21942.64
O-1	11678.10	2366.28	980.96	3037.23	15136.36	709.60	1208.51	1914.31	13218.06	1906.26	16142.82
O-0 E	23909.15	3853.03	980.96	4943.99	28853.14	1465.83	3733.37	5199.00	23684.14	2272.79	31125.93
O-0 E	16481.84	3106.95	980.96	4298.91	23778.76	1194.24	3006.42	4700.80	19678.09	1613.57	25392.33
O-1 E	18933.98	2568.18	980.96	3857.14	18491.10	976.75	2171.51	3146.26	16243.84	1288.89	20780.99
ALLO-3	21182.03	3953.03	980.96	4943.99	28106.01	1287.23	3007.72	4304.93	21601.06	2009.06	26116.07
ALLO-2	16531.44	3308.28	980.96	4297.26	20828.70	1013.38	2357.41	3270.79	17837.91	1868.48	22417.17
ALLO-1	12108.42	2568.25	980.96	3357.24	15665.68	742.26	1325.86	2067.61	13897.86	1041.35	16707.61
ALL CO	22084.04	3572.90	980.96	4390.46	27027.49	1261.08	3385.86	4616.84	22410.86	2262.84	28280.13
W-4	24003.09	4350.80	980.96	5341.91	29345.00	1471.39	3487.77	4939.16	24406.84	2314.92	31609.92
W-3	18011.41	3347.61	980.96	4537.97	23345.35	1165.40	2294.67	3460.27	20489.11	1704.26	25063.67
W-2	16334.46	3537.06	980.96	4826.01	20862.50	1001.30	1695.26	2998.56	18188.94	1387.82	22220.12
W-1	13788.43	3227.37	980.96	4216.33	17988.78	844.01	1236.18	2063.16	16903.61	1134.13	19120.86
ALL W	17818.87	3588.85	980.96	4860.81	22185.63	1073.90	1989.05	3002.96	19138.67	1526.86	23726.29
ALLOFF	21785.89	3953.98	980.96	4944.92	28710.92	1246.61	3265.36	4814.77	22184.16	2206.04	28916.9d
H-8	25853.60	3870.00	1438.10	6308.10	31661.70	1387.67	4072.01	5659.88	28202.02	2480.19	34381.89
E-9	20481.41	3629.97	1438.10	5286.07	20728.46	1264.28	2402.42	3856.71	22072.78	1867.87	27587.35
E-8	16886.79	3626.72	1438.10	4986.62	21925.62	1039.88	1633.80	2680.48	19246.14	1477.04	23482.68
E-7	14241.48	3248.12	1438.10	4884.22	18923.70	973.00	1160.02	2033.02	16892.68	1237.21	20162.92
E-6	11713.88	2548.68	1438.10	4385.58	16100.34	718.06	788.16	1608.22	14584.12	1080.48	17180.82
E-5	9803.67	2586.46	1438.10	4008.36	13016.43	582.88	586.23	1149.18	12227.23	963.68	14480.12
E-4 +4	8647.62	2028.46	1438.10	3464.88	12312.18	542.36	680.92	1223.28	11088.90	866.26	13176.44
E-4 -4	7781.53	2028.47	1438.10	3364.87	11258.09	477.62	478.63	953.28	10302.84	844.16	12180.28
ALLE-4	8132.89	2028.46	1438.10	3464.86	11597.46	486.05	641.99	1040.84	10886.92	801.31	12446.77
E-3	7240.78	1840.88	1438.10	3078.08	10319.84	443.88	521.58	975.45	9384.39	739.91	11059.74
E-2	6703.20	1572.72	1438.10	2870.82	8574.02	410.81	478.82	883.73	8532.28	658.81	10322.52
E-1	6016.60	1321.74	1438.10	2709.84	6775.44	366.76	362.50	781.26	6024.18	623.36	9398.80
ALL ENL	9877.06	2164.87	1438.10	3802.77	12579.82	580.28	627.06	1177.38	11402.45	891.62	13461.48
ALL000	10726.87	2409.73	1378.88	3788.09	14815.27	846.87	988.61	1034.48	12860.78	1062.68	15376.13

TABLE 35

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1981
FOR OFFICERS AND ENLISTEES BY GRADE

	SPY	BAO+VIA	BAS	ALL	CPY	SST	FIV	IGF	DIS	TAD	RMC
C/S	50112.00	7340.40	1132.68	6478.08	51244.69	1975.05	13107.22	15082.27	36162.41	7992.47	66577.53
O-10	50112.00	7340.40	1132.68	6478.08	51244.69	1975.05	13107.22	15082.27	36162.41	7992.47	66577.53
O-9	50112.00	7453.71	1132.68	6505.39	51816.77	1975.05	12957.65	14932.90	36803.87	8079.32	66777.71
O-8	50112.00	7654.93	1132.68	6598.61	54104.90	1975.05	12832.30	14807.40	36297.39	8463.89	67578.51
O-7	50112.00	7888.22	1132.68	6702.90	54394.78	1975.05	12792.44	14761.49	36227.28	8485.10	67618.00
O-6	43734.16	7340.78	1132.68	6478.46	49866.08	1975.05	9906.28	11961.33	37904.75	7234.91	59442.56
O-5	36240.83	6948.20	1132.68	6060.88	41869.78	1972.77	6727.46	8700.23	33169.55	6034.82	48942.84
O-4	28043.73	6209.36	1132.68	5342.54	34977.48	1899.38	4838.01	6736.38	28241.11	4153.70	40340.08
O-3	23742.68	5083.17	1132.68	5215.65	28838.57	1578.89	3713.01	5291.90	23547.67	2944.39	32902.92
O-2	18448.28	4043.24	1132.68	5173.92	22352.85	1226.81	2749.65	3986.46	14268.38	2174.95	23789.16
O-1	13283.20	3412.30	1132.68	4543.04	17863.97	884.07	1530.67	2482.74	14586.63	1498.21	18237.44
O-3 F	27276.03	5574.67	1132.68	6707.55	32867.35	1813.99	4750.85	6564.84	28302.51	3761.96	37747.54
O-2 E	22347.71	4511.29	1132.68	5843.97	26520.98	1486.12	3849.74	5335.86	21284.22	2834.13	30826.81
O-1 E	18064.58	3853.49	1132.68	5085.17	22378.32	1201.30	2753.47	3956.78	18422.76	2173.70	23324.48
ALLO-3	24124.64	5136.28	1132.68	6268.97	29274.74	1604.29	3825.14	5429.43	23848.31	3032.73	33426.54
ALLO-2	18039.00	4113.66	1132.68	5246.34	22908.91	1265.83	2923.66	4189.49	18720.46	2274.13	26586.47
ALLO-1	13828.43	3474.21	1132.68	4606.39	17676.30	920.32	1730.89	2661.21	13025.09	1378.41	20021.73
ALL CO	25167.86	6270.32	1132.68	5408.00	30290.25	1506.72	4269.44	6836.17	24404.08	3465.00	38035.98
X-4	27347.99	5673.14	1132.68	6805.82	32932.03	1831.94	4174.09	8006.03	28626.00	3392.83	37746.34
X-3	21643.30	4878.66	1132.68	6111.33	26113.72	1439.29	2606.52	4124.81	21968.91	2329.39	30084.10
X-2	16803.92	4480.01	1132.68	5612.69	22808.76	1230.48	2005.46	3335.92	18172.83	1872.80	26288.11
X-1	15931.78	3983.82	1132.68	5116.30	19564.48	1058.48	1642.07	2701.54	16862.84	1642.03	22610.11
ALL VO	20070.68	4684.38	1132.68	5787.06	24136.04	1334.70	2411.78	3746.48	20389.57	2117.84	27985.68
ALLOFF	24840.28	5231.36	1132.68	6368.04	29894.63	1551.81	4150.02	5701.83	24192.80	3378.41	34682.74
N/S	31068.00	4424.40	1642.50	6066.90	32710.50	1975.05	5386.68	7361.63	23344.87	3491.33	40626.23
E-9	24161.65	5330.93	1642.50	6978.43	28769.97	1606.75	3249.40	4856.20	24913.76	3005.68	34140.76
E-8	19970.82	4892.29	1642.50	6334.78	28030.77	1328.07	2242.71	3570.77	21458.99	2288.70	28804.41
E-7	16537.98	4488.02	1642.50	6108.32	21250.50	1106.43	1563.63	2692.12	18858.43	1838.78	24580.28
E-6	13740.98	3942.67	1642.50	5585.17	17815.68	913.78	1140.64	2054.4	15781.27	1501.34	20827.50
E-5	11143.88	3326.86	1642.50	497.38	14816.07	741.07	891.00	1632.07	12886.00	1269.08	17384.36
E-4 +A	9903.28	2548.76	1642.50	418.26	12284.63	563.92	913.82	1377.74	10688.89	1038.16	18273.21
E-4 -A	8654.97	2548.76	1642.50	418.26	11145.78	509.52	686.80	1276.32	9869.46	1057.75	14113.86
ALL-E	9301.73	2548.76	1642.50	418.26	11582.56	618.57	775.42	1393.99	10188.57	1073.53	14566.52
E-3	8048.77	2101.68	1642.50	3749.56	9413.24	535.24	661.31	1196.55	8216.69	928.55	12720.88
E-2	7419.60	1726.83	1642.50	3369.03	8167.43	493.40	591.45	1084.85	7082.57	811.50	11600.13
E-1	6616.90	1557.31	1642.50	3198.81	7062.25	440.02	474.41	914.43	8147.83	747.32	10564.14
ALL EN	10215.61	2798.35	1642.50	444.43	12759.60	885.93	874.32	1560.11	11188.28	1187.60	15824.87
ALL DOO	12308.82	3132.77	1672.53	4705.30	16111.14	804.81	1323.66	2128.67	12982.47	1471.01	18495.23

TABLE 36

**DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1982
FOR OFFICERS AND ENLISTEES BY GRADE**

	BPY	BAG+VHA	BAS	ALL	CFY	SST	FIT	TOT	OIS	140	RMC
C/S	50112.00	7340.40	1132.68	8473.08	50595.08	1975.05	13107.22	15082.27	43302.81	7992.47	66377.55
O-10	50112.00	9102.12	1132.68	10234.80	60346.80	1975.05	13142.81	15117.86	43328.94	9705.40	70052.20
O-9	50112.00	9153.36	1132.68	10286.04	60398.04	1975.05	12937.05	14932.90	43408.14	9737.01	70135.08
O-8	50112.00	9007.77	1132.68	10140.45	60252.45	1975.05	12832.35	14807.40	43448.05	9580.51	69632.98
O-7	50112.00	8936.70	1132.68	10069.38	60181.38	1975.05	12782.44	14767.49	43413.89	9507.70	69689.04
O-6	43734.16	7891.83	1132.68	9024.51	52758.70	1975.05	9966.28	11961.33	40787.36	7751.50	60310.20
O-5	35246.83	7337.32	1132.68	8470.00	43716.83	1972.77	6727.46	8700.23	38016.60	6967.26	49684.10
O-4	29043.75	6908.14	1132.68	7741.92	36295.87	1988.36	4838.01	6736.38	30048.19	4426.60	41212.17
O-3	23742.68	5274.84	1132.68	6407.32	30150.00	1976.89	3713.01	5291.90	24058.10	3045.02	33195.02
O-2	18448.29	4226.12	1132.68	5358.80	23837.08	1226.81	2759.65	3986.46	19820.62	2263.87	26070.98
O-1	13235.20	3603.42	1132.68	4238.10	18032.29	884.07	1838.67	2987.74	13548.36	1893.21	19801.81
O-3 E	27278.03	9929.78	1132.68	7052.46	34340.48	1815.99	4750.85	6564.81	27775.66	3988.14	38328.83
O-2 E	22347.71	4967.72	1132.68	6100.40	28448.11	1486.12	3949.74	5338.86	23112.24	3098.70	31956.90
O-1 E	18964.38	4345.38	1132.68	5478.06	23942.64	1201.30	2755.47	3956.76	19383.87	2359.06	25901.68
ALLO-3	24124.64	9345.42	1132.68	6478.10	30602.75	1604.29	3825.14	5429.43	25173.32	3147.63	33750.38
ALLO-2	18035.00	4337.70	1132.68	5470.38	24805.38	1265.83	2523.68	4189.49	20315.88	2388.48	28884.86
ALLO-1	13839.42	3689.89	1132.68	4922.67	18662.10	920.32	1730.89	2851.21	16010.88	1859.76	20321.98
ALL CO	25187.96	5562.53	1132.68	6685.21	31863.17	1566.72	4269.44	5838.17	26027.01	3604.55	33317.73
M-4	27847.88	8020.32	1132.68	7153.00	24700.98	1831.94	4174.09	6008.03	28694.98	3602.88	38303.87
M-3	21643.38	5232.49	1132.68	6365.17	26008.56	1438.29	2685.52	4124.61	23883.74	2443.90	30452.45
M-2	18803.92	4868.14	1132.68	6000.82	24804.74	1250.46	2085.45	3335.92	21468.82	2022.73	26827.47
M-1	15931.76	4225.00	1132.68	5361.74	21283.50	1009.46	1642.07	2701.64	16881.97	1643.82	22839.32
ALL WO	20070.68	4983.28	1132.68	6115.96	26186.03	1334.70	2411.76	3746.48	22440.15	2252.58	28439.22
ALLOFF	24840.20	5528.29	1132.68	6657.97	31498.26	1551.81	4150.02	8701.83	25788.43	3564.43	35082.68
M/S	31068.00	4424.40	1842.50	6066.90	37134.90	1978.05	5386.50	7361.63	29773.27	3491.33	40626.23
E-9	24181.65	8748.81	1842.50	7391.31	31552.90	1608.75	3249.45	4856.20	20696.76	3219.82	34772.78
E-8	19070.92	8387.63	1842.50	7010.15	26951.07	1328.07	2242.71	3570.77	23410.29	2497.09	29478.18
E-7	16637.86	4342.65	1842.50	6585.18	23223.14	1106.43	1585.69	2892.12	20331.02	2002.70	25230.83
E-6	13740.88	4362.87	1842.50	6005.37	19748.35	913.78	1140.64	2054.41	17681.94	1633.98	21380.33
E-5	11143.88	3878.63	1842.50	5319.15	16463.01	741.07	891.00	1632.07	14830.94	1375.83	17836.84
E-4	9903.78	2843.51	1642.00	4486.01	14469.78	662.92	913.82	1372.74	12882.05	1193.23	15663.02
E-4 -4	8864.97	2843.52	1642.50	4486.02	13350.99	589.52	886.80	1276.32	12074.67	1147.01	14498.00
ALLE-4	8301.75	2843.51	1642.50	4486.01	13787.75	618.57	775.42	1393.99	12383.76	1165.06	14892.81
E-3	9048.77	2810.30	1842.50	4252.80	12391.58	523.24	661.21	1196.55	11185.01	1083.80	13285.36
E-2	7419.60	2118.58	1842.50	3761.08	11180.58	491.48	591.48	1084.85	10088.82	916.93	12097.61
E-1	6816.80	1922.16	1842.50	3564.66	10181.46	440.02	474.41	914.43	9267.04	842.81	11024.28
ALLENL	10319.81	3188.80	1642.50	4831.30	19146.91	685.99	874.32	1560.31	12388.80	1287.83	16434.78
ALLDOD	12308.82	3508.45	1572.53	5081.98	17350.80	804.81	1323.86	2128.67	15262.23	1600.28	18881.19

TABLE 37

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1983
FOR OFFICERS AND ENLISTEES BY GRADE

	APY	BAG+VHA	BAS	ALL	CPY	SSZ	FIT	TOT	DIS	TAU	RMC
C/S	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-10	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-9	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-8	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-7	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-6	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-5	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-4	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-3	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-2	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
C-1	87498.20	7639.80	1178.04	8812.64	88677.24	2170.80	15198.05	17387.45	41308.79	7908.10	74221.94
O-3 E	28340.68	8768.85	1178.04	8867.89	34104.94	1888.82	4695.91	6884.74	27810.20	3583.69	38891.84
O-2 E	28340.68	8768.85	1178.04	8867.89	34104.94	1888.82	4695.91	6884.74	27810.20	3583.69	38891.84
O-1 E	28340.68	8768.85	1178.04	8867.89	34104.94	1888.82	4695.91	6884.74	27810.20	3583.69	38891.84
ALLO-3	24940.28	8481.12	1178.04	8639.18	30376.17	1871.90	3753.42	6424.42	24801.74	2953.90	34833.24
ALLO-2	24940.28	8481.12	1178.04	8639.18	30376.17	1871.90	3753.42	6424.42	24801.74	2953.90	34833.24
ALLO-1	24940.28	8481.12	1178.04	8639.18	30376.17	1871.90	3753.42	6424.42	24801.74	2953.90	34833.24
ALL CO	28078.92	8828.37	1178.04	8803.41	31842.11	1860.88	4166.17	6817.03	28728.07	3533.69	38818.03
M-4	28327.78	8862.98	1178.04	7141.02	33727.80	1887.58	4018.44	6916.39	27811.11	3219.88	38888.64
M-3	28327.78	8862.98	1178.04	7141.02	33727.80	1887.58	4018.44	6916.39	27811.11	3219.88	38888.64
M-2	28327.78	8862.98	1178.04	7141.02	33727.80	1887.58	4018.44	6916.39	27811.11	3219.88	38888.64
M-1	28327.78	8862.98	1178.04	7141.02	33727.80	1887.58	4018.44	6916.39	27811.11	3219.88	38888.64
ALL WG	20778.12	4824.89	1178.04	8102.73	28100.80	1382.00	2366.96	3788.80	21341.88	2071.38	28950.24
ALL OFF	28738.10	8860.34	1178.04	6788.38	31128.11	1843.88	4041.18	6884.76	28443.38	3282.66	36749.04
M/S	32310.00	4600.60	1708.20	6308.00	34018.20	2164.77	5262.00	7426.77	25881.43	3328.90	41848.90
E-9	23092.57	9601.37	1708.20	7308.57	30972.80	1681.20	3182.83	4874.03	25881.43	2894.81	38296.95
E-8	20897.17	8128.68	1708.20	6838.78	28996.52	1386.71	2188.28	3585.99	22410.83	2230.00	28763.98
E-7	17173.32	4858.95	1708.20	6364.15	21943.82	1180.81	1584.88	2708.48	18238.16	1788.31	28326.77
E-6	14180.21	4143.43	1708.20	5861.63	18462.14	848.08	1108.00	2087.07	16408.07	1458.68	21467.83
E-5	11618.87	3474.32	1708.20	5182.52	16028.87	771.64	887.78	1639.33	13308.58	1288.99	17887.09
E-4 1A	10376.82	2673.31	1708.20	4381.81	12728.14	585.23	684.78	1880.01	11148.13	1042.81	15830.84
E-4 4	9173.81	2673.33	1708.20	4381.83	11823.10	614.83	682.41	1277.04	10248.07	1001.81	14858.88
ALLE-4	8884.07	2673.33	1708.20	4381.83	11843.64	642.80	740.14	1382.84	10880.69	1015.84	14881.44
E-3	8280.07	2186.26	1708.20	3884.46	9713.41	554.78	627.23	1181.98	9831.41	877.26	12081.80
E-2	7711.90	1827.38	1708.20	3533.58	8844.28	518.99	568.86	1080.85	7488.78	788.08	12018.48
E-1	6883.20	1680.88	1708.20	3338.19	7407.41	481.17	484.43	918.60	6491.81	708.22	10848.62
ALL ENL	10704.40	2948.30	1708.20	4687.50	13290.08	717.18	848.80	1887.09	11728.98	1120.23	18482.14
ALL DOC	12787.70	3318.68	1834.38	4880.03	16773.83	848.18	1284.25	2140.44	18888.40	1417.14	18184.87

TABLE 38

**DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1984
FOR OFFICERS AND ENLISTEES BY GRADE**

	NPY	BAQ-VNA	RAS	ALL	CPV	SST	FIT	YOT	DIS	TAD	MNC
C-3	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-10	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-9	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-8	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-7	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-6	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-5	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-4	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-3	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-2	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-1	63998.80	7941.60	1225.20	9160.80	67224.00	2532.60	16343.30	18316.10	48347.90	6638.03	81803.63
O-3 E	29583.03	5824.95	1225.20	7050.15	35364.77	1882.08	4368.73	6348.79	28015.98	2887.58	39620.87
O-2 E	24212.99	4885.61	1225.20	5109.81	28939.36	1622.27	3395.61	5317.88	23921.51	2300.75	32628.56
O-1 E	19671.01	4084.10	1225.20	3309.30	23745.12	1317.96	2447.81	3705.48	19979.68	1874.43	26654.74
ALLO-3	26139.93	5482.58	1225.20	6707.88	31890.01	1751.38	3511.64	5262.92	26317.09	2503.81	35351.02
ALLO-2	20320.99	4500.03	1225.20	3725.23	24863.08	1374.91	2371.01	3245.91	20912.17	1843.20	28088.42
ALLO-1	15032.82	3658.43	1225.20	4893.63	18681.38	1007.20	1837.43	2144.84	18136.74	1247.01	21163.58
ALL 00	27209.42	8849.99	1225.20	6875.19	32772.84	1780.74	3890.49	5571.23	27101.62	2766.46	36931.08
M-3	29187.00	6038.39	1225.20	7263.59	34658.60	1956.20	3603.03	5338.23	29020.37	2703.24	39163.83
M-2	20001.92	4847.77	1225.20	6072.97	23936.51	1340.13	1875.81	3218.84	20720.88	1883.74	27640.63
M-1	16752.51	4087.30	1225.20	5322.90	20442.87	1122.43	1587.11	2709.34	17733.33	1299.96	23375.07
ALL M0	21478.32	4973.28	1225.20	8190.48	25772.06	1438.93	2213.85	3392.78	22119.30	1769.78	29444.78
ALL M0 F	26916.44	5806.57	1225.20	8831.77	32323.64	1758.80	3782.91	5541.72	26781.93	2702.81	36480.72
M-3	33602.40	4784.40	1777.55	6501.95	35379.95	2281.36	4858.84	7109.99	28269.95	2833.73	42998.08
E-9	26103.30	5648.85	1777.55	7426.40	32634.32	1748.92	2987.19	4736.11	27298.21	2497.04	36026.75
E-8	21374.40	5188.43	1777.55	6865.98	28757.13	1432.09	2082.97	3485.06	23272.07	1920.88	30261.39
E-7	17793.29	4733.63	1777.55	6311.40	22874.37	1192.18	1479.69	2563.84	20008.53	1613.14	25817.82
E-6	14668.12	4228.64	1777.55	6006.08	19106.70	982.77	1052.73	2335.80	17071.20	1235.24	21909.46
E-5	12014.02	3556.14	1777.55	5333.69	15656.71	804.84	831.42	1536.37	14020.34	1046.71	18384.41
E-4 +4	10832.84	2759.39	1777.55	4536.94	13351.80	725.80	831.20	1537.00	11794.89	898.36	16288.14
E-4 -4	9371.04	2759.37	1777.55	4536.92	12090.05	641.26	635.40	1276.56	10813.39	856.40	14964.30
ALLE-4	10068.76	2759.38	1777.55	4536.93	12017.79	676.62	717.29	1383.91	11223.88	873.95	15509.64
E-3	8651.11	2275.84	1777.55	4053.09	10214.67	879.62	598.40	1178.10	9038.57	763.38	13469.58
F-2	8028.40	1814.21	1777.55	3691.76	8970.74	537.63	532.55	1370.16	7900.59	600.03	12386.20
E-1 +4	7156.80	1708.62	1777.55	3487.37	7702.47	479.51	431.16	910.67	6791.80	628.75	11272.80
E-1 -4	6863.20	1637.66	1708.20	3360.08	7420.47	461.17	392.63	353.82	6566.65	600.37	10849.63
ALLE-1	6974.40	1673.18	1731.32	3406.50	7514.47	467.28	405.49	872.77	6841.70	608.82	10980.72
ALLEM	11227.44	3054.79	1773.03	4828.43	13978.46	752.24	815.50	1567.74	12410.72	972.58	17028.45
ALLD00	13448.81	3416.08	1895.98	5112.08	10675.81	694.78	1235.65	2130.40	14445.51	1217.52	19778.40

TABLE 39

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1985
FOR OFFICERS AND ENLISTEES BY GRADE

	BPY	BAO+VNA	DAS	ALL	CPY	SST	FIT	TOT	D13	T40	RPC
C/3	68095.80	7930.80	1274.18	9204.98	89072.88	2781.80	17014.74	19866.54	50109.42	6663.68	84558.42
C-10	68686.80	7979.88	1274.18	9153.82	89972.90	2781.80	17273.06	20064.68	49908.10	5601.80	84534.21
O-9	58896.80	6443.74	1274.18	9717.90	72123.22	2781.80	17103.35	19893.16	52228.07	7049.69	85466.39
O-8	58011.20	8735.60	1274.18	10009.76	72778.25	2781.80	16723.93	19317.73	53200.62	7267.39	85288.34
O-7	59130.00	8838.88	1274.18	10113.12	73516.17	2781.80	15109.74	19861.84	48584.03	6890.08	78133.77
O-6	49285.32	8679.18	1274.18	9933.32	67015.90	2780.20	9489.62	12259.88	44756.02	6000.29	85338.93
O-5	39838.57	8231.50	1274.18	9503.88	48047.46	2734.87	8432.58	9167.53	38078.91	4860.11	64201.54
O-4	33009.10	7448.25	1274.18	8222.44	40310.88	2327.14	4697.82	7024.98	33485.92	3784.95	49318.48
O-3	26743.36	5903.24	1274.18	7177.40	32783.26	1888.41	3544.97	6430.37	27352.91	2634.37	36378.13
O-2	20089.96	4600.86	1274.18	5874.82	24708.88	1414.02	2388.31	3802.32	20808.54	1728.35	27711.13
O-1	15036.03	3747.98	1274.18	5022.11	18976.47	1060.23	1356.92	2617.14	16359.32	1292.92	21383.88
O-3 E	30781.52	8303.08	1274.18	7877.24	37192.08	2167.98	4543.01	8710.99	30481.09	3237.31	41366.07
O-2 E	24710.40	6132.91	1274.18	6407.07	29097.32	1742.44	5407.22	8149.65	24747.87	2386.44	33488.90
O-1 E	19980.47	4363.62	1274.18	5839.78	24604.73	1408.51	2344.39	3930.90	20953.83	1818.82	27410.17
ALLO-3	27200.14	6946.81	1274.18	7222.97	33288.72	1917.81	3058.71	8576.31	27709.41	2720.81	37143.91
ALLO-2	20620.45	4965.82	1274.18	5939.78	28342.04	1484.08	2312.63	3968.74	21378.30	1851.00	28416.22
ALLO-1	15687.07	3825.72	1274.18	5099.68	18672.82	1103.83	1881.25	2785.08	16387.45	1369.27	22118.23
ALL CO	28008.91	6170.70	1274.18	7444.66	34704.20	1889.70	4081.58	9041.28	28662.83	3041.45	38993.22
W-4	30623.78	8727.47	1274.18	8001.63	37314.32	2181.93	3879.14	8031.07	31283.25	3033.48	41868.88
W-3	28018.33	8627.74	1274.18	7101.90	30440.18	1763.79	2836.77	4422.86	26017.83	2190.68	34310.89
W-2	20822.25	6236.97	1274.18	6511.13	26280.88	1483.87	1903.18	3417.02	21873.67	1700.74	28834.11
W-1	17222.28	4257.60	1274.18	5531.76	21139.27	1214.17	1888.71	2880.88	18288.38	1384.82	24118.85
ALL NO	22608.78	8418.92	1274.18	6881.08	27645.87	1593.92	2381.28	3975.18	23070.49	1963.89	31265.55
ALLOFF	28121.71	6121.47	1274.18	7393.63	34243.22	1835.81	3970.83	5908.34	28338.88	2971.19	38388.54
N-8	34945.20	5158.80	1846.90	7006.70	36792.10	2403.84	5050.08	7514.32	29277.78	3032.87	44983.77
E-9	27147.82	6293.07	1846.90	6139.87	33858.85	1910.90	3108.72	8022.63	28837.23	2781.98	39049.48
E-8	22194.56	6759.12	1846.90	7806.02	28238.41	1564.72	2108.28	3873.88	24582.43	2103.81	31904.40
E-7	16428.97	6243.62	1846.90	7090.62	23847.57	1298.03	1500.71	2788.75	21847.82	1648.08	27162.88
E-6	13280.41	4817.72	1846.90	6404.62	20108.70	1078.88	1105.48	2181.34	17928.58	1343.05	23068.08
E-5	12843.77	3819.83	1846.90	6808.83	16461.84	884.33	888.32	1770.68	14891.28	1127.98	18338.58
E-4 +4	11208.93	2982.77	1846.90	4809.87	13992.42	784.32	889.04	1463.35	12328.08	856.18	17032.78
E-4 -4	9981.73	2862.78	1846.90	4809.88	12877.20	731.88	649.47	1351.08	11328.14	828.78	15880.14
ALL -4	10550.78	2882.78	1846.90	4809.88	13278.28	743.83	749.48	1493.31	11782.88	941.23	16301.88
E-3	9034.31	2536.88	1846.90	4403.40	10848.99	638.33	810.88	1248.43	9597.88	840.86	14258.42
E-2	8344.80	2167.11	1846.90	3964.01	9384.48	688.31	549.84	1138.10	8248.31	733.00	13032.31
E-1 +4	7444.80	1902.28	1846.90	3749.18	8251.97	524.88	423.89	948.88	7303.13	683.10	11877.09
E-1 -4	6883.20	1902.33	1788.20	3610.53	7809.16	485.27	344.50	828.77	6839.38	646.87	11140.80
ALL -1	7070.40	1902.31	1784.43	3888.75	7883.42	498.47	370.89	869.48	6993.90	638.95	11386.09
ALL ENL	11771.26	3368.81	1840.00	3208.61	14848.31	829.87	853.08	1682.95	13183.35	1082.46	18042.33
ALL ENL	14119.58	3763.98	1788.74	5622.72	17032.18	908.71	1300.82	2288.83	15342.62	1336.60	20878.87

TABLE 40

**DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1986
FOR OFFICERS AND ENLISTEES BY GRADE**

	BPY	BAD+VIA	RAS	ALL	CPY	SST	FIT	TOT	DIS	TAD	RMC
E-5	60098.80	8168.40	1312.44	9480.84	70011.24	3003.00	16851.19	19854.19	50157.05	6860.18	85039.82
E-6	68890.80	8113.89	1312.44	9428.33	70011.24	3003.00	17069.01	20092.01	49919.23	6780.60	85005.73
O-9	68890.80	8168.40	1312.44	9480.84	71502.30	3003.00	16791.71	19794.71	51707.59	6854.73	85034.37
O-8	68698.80	8146.96	1312.44	9458.40	72713.17	3003.00	16816.05	19816.05	52892.12	6862.43	85020.63
O-7	60904.80	9145.36	1312.44	10457.82	66340.81	3003.00	13718.35	16721.35	49619.46	7141.47	78304.08
O-6	50766.17	9984.55	1312.44	10295.98	58537.70	3000.64	9819.39	12620.03	45817.08	6209.11	67272.27
O-5	41149.75	8533.45	1312.44	9847.89	49354.64	2907.19	6860.28	9573.48	39981.19	5037.88	56005.50
O-4	33899.39	7694.24	1312.44	9008.68	41496.74	2423.81	6806.12	7229.92	34266.81	3985.30	46781.37
O-3	27330.83	6113.31	1312.44	7425.75	33502.65	1955.56	3563.54	5519.10	27983.52	2659.77	37476.35
O-2	20947.38	4009.85	1312.44	6110.29	25808.83	1497.74	2475.08	3973.82	21838.22	1843.10	28908.77
O-1	15534.84	3954.83	1312.44	5287.27	19701.07	1108.60	1685.44	2874.04	17027.03	1326.22	22098.33
O-3 E	31899.31	6593.29	1312.44	7905.73	38331.23	2206.50	4632.05	8898.54	31432.71	3351.70	42956.74
O-2 E	25728.97	5415.55	1312.44	6727.99	31202.69	1838.62	3519.75	5359.37	25043.32	2453.33	34940.29
O-1 E	21016.92	4507.37	1312.44	5619.81	25764.36	1502.64	2662.69	4165.33	21099.03	1857.25	28702.98
ALL O-3	27867.64	6170.36	1312.44	7402.80	34076.53	1992.54	3690.53	5603.07	26393.48	2777.25	38127.69
ALL O-2	21589.68	4883.46	1312.44	6195.90	26510.82	1542.05	2811.74	4153.97	22366.85	1938.17	28693.74
ALL O-1	16224.44	4026.96	1312.44	5339.42	20492.77	1160.05	1708.71	2888.78	17624.01	1338.86	22960.72
ALL O-0	29415.23	6416.00	1312.44	7729.12	35779.77	2090.00	4183.91	6246.79	28332.98	3114.38	40778.73
M-4	31432.50	5937.86	1312.44	8280.30	38237.21	2248.85	4039.62	8288.48	31988.74	3137.37	42840.17
M-3	29817.34	5007.68	1312.44	7320.12	31345.23	1846.98	2755.47	4601.48	26748.30	2254.02	36392.08
M-2	21933.08	5473.54	1312.44	6785.98	26716.48	1688.21	2887.07	3656.09	23060.39	1790.40	30509.48
M-1	17244.35	4478.68	1312.44	5791.12	21165.65	1232.97	1504.40	2737.37	18428.28	1320.08	24388.55
ALL M-0	23503.06	5648.88	1312.44	6961.32	28686.39	1684.04	2463.82	4147.86	24538.53	2096.59	32550.90
ALL OFF	29030.72	6308.31	1312.44	7878.75	35314.49	2038.16	4072.96	6109.11	28208.38	3062.37	39771.84
M-5	35982.80	5313.80	1901.65	7215.25	37894.45	2573.49	5171.04	7744.53	30149.92	3098.23	46308.28
E-9	29107.01	6537.99	1901.65	8439.64	35014.89	2009.65	3263.64	5273.29	29741.60	2878.78	39423.44
E-8	22832.70	6018.92	1901.65	7920.57	29204.94	1632.54	2169.30	3801.84	25403.11	2181.99	32935.28
E-7	18042.41	5468.12	1901.65	7370.77	24699.73	1351.53	1846.53	2908.07	21791.68	1705.27	28118.45
E-6	15763.16	4831.71	1901.65	6733.36	20871.65	1127.08	1332.34	2259.60	18012.08	1390.87	23887.59
E-5	12956.28	4004.76	1901.65	5908.41	17126.72	926.37	894.98	1821.33	15305.59	1160.49	20023.17
E-4 +4	11592.45	3109.87	1901.65	5011.52	14538.09	828.86	668.86	1698.72	12839.37	981.34	17585.31
E-4 -4	10179.32	3109.88	1901.65	5011.53	13124.98	727.82	644.56	1372.38	11752.60	944.15	16134.99
ALL E-4	10762.89	3105.87	1901.65	5011.52	13708.54	769.55	737.60	1807.15	12201.40	989.51	16733.92
E-3	9268.82	2662.50	1901.65	4564.15	11175.88	662.72	612.60	1275.40	9900.48	899.30	14692.27
E-2	6586.80	2179.90	1901.65	4075.55	9657.14	614.67	588.84	1183.51	8478.62	748.36	13420.71
E-1 +4	7668.00	1916.66	1901.65	3816.31	8328.73	540.26	447.01	996.07	7332.68	687.08	12173.59
E-1 -4	7088.40	1916.81	1753.30	3075.91	7729.34	506.82	366.26	873.08	6858.27	649.04	11413.35
ALL E-1	7201.60	1916.63	1806.78	3723.30	7929.14	520.63	393.44	914.00	7015.08	651.72	11666.70
ALL M-1	12168.83	3537.23	1894.83	5432.06	15440.51	870.07	870.56	1740.65	13707.87	1096.62	18097.50
ALL O-0	14896.25	3944.34	1811.02	5755.36	18307.22	1037.87	1031.40	2369.27	15937.98	1379.49	21730.10

TABLE 41

**DETAILED FIGULAR MILITARY COMPENSATION TABLE IN 1987
FOR OFFICERS AND ENLISTEES BY GRADE**

	BPY	BAGWIA	DAS	ALL	CPY	SSI	FIT	IG	DIS	LHO	IMR
C-3	70001.20	3417.20	1351.00	9767.00	27152.00	3171.70	1337.00	17.00	17.00	17.00	17.00
O-10	70801.20	8362.40	1351.00	9711.20	27374.64	3111.20	1400.00	17.00	17.00	17.00	17.00
O-9	70001.20	8413.20	1351.00	9711.20	27374.64	3111.20	1400.00	17.00	17.00	17.00	17.00
O-8	70001.20	8464.00	1351.00	9711.20	27374.64	3111.20	1400.00	17.00	17.00	17.00	17.00
O-7	62723.60	8190.47	1351.00	9711.20	27374.64	3111.20	1400.00	17.00	17.00	17.00	17.00
O-6	62723.60	8241.27	1351.00	9711.20	27374.64	3111.20	1400.00	17.00	17.00	17.00	17.00
O-5	62723.60	8292.07	1351.00	9711.20	27374.64	3111.20	1400.00	17.00	17.00	17.00	17.00
O-4	42246.30	6750.54	1351.00	10110.34	50923.57	3001.01	51.00	99.40	99.40	99.40	99.40
O-4	34844.00	7883.12	1351.00	9231.42	47649.19	2491.35	1038.25	6329.60	36319.60	3076.67	17185.78
O-3	28107.17	6294.66	1351.00	7646.46	31536.73	2009.66	3023.04	1493.60	26443.13	2075.03	17028.71
O-2	21540.51	4926.11	1351.00	6277.91	20646.16	1543.65	2202.06	1745.71	22940.45	1636.06	29503.40
O-1	15521.81	4015.79	1351.00	5367.59	19907.40	1109.01	1360.32	2470.62	17419.70	997.93	21802.13
O-3 E	32800.51	6710.42	1351.00	8052.22	39643.41	2145.24	3901.97	3377.21	33316.70	2762.72	43625.45
O-2 E	26767.64	8535.78	1351.00	6807.58	32491.61	1915.32	3255.43	5170.75	27350.06	2144.23	35819.45
O-1 E	22119.00	4661.23	1351.00	6011.03	27132.00	1581.51	2450.23	4031.73	23100.92	1850.12	29902.24
ALLO-3	26705.90	6347.71	1351.00	7699.51	35100.32	2052.46	3198.51	5250.99	219937.53	2162.81	38568.29
ALLO-2	22261.13	5004.88	1351.00	6358.68	27436.24	1591.67	2738.16	3929.63	23506.42	1701.72	30319.53
ALLO-1	16758.83	4087.90	1351.00	5439.70	20696.81	1162.90	1482.52	2645.03	10051.73	1088.70	27787.22
ALL CO	30187.39	6878.88	1351.00	7930.68	36785.10	2120.67	3474.25	5504.82	31190.20	2520.20	40636.27
W-4	32031.29	7079.24	1351.00	8471.04	38020.21	2290.24	1000.06	5388.32	33619.89	2150.65	47591.02
W-3	26519.91	6223.95	1351.00	7575.75	32368.11	1890.17	2224.20	4120.30	20247.73	1427.03	35322.69
W-2	22067.16	5620.30	1351.00	6922.10	27086.46	1643.64	1643.64	221.44	23835.02	1339.21	30270.51
W-1	17980.37	4644.48	1351.00	5996.29	22025.43	1203.59	1173.24	2450.01	19956.00	1132.20	25176.93
ALL W1	24357.01	5897.23	1351.00	7249.03	29797.20	1741.53	1976.31	2717.03	26079.35	172.21	34970.79
ALL W2	29806.77	6534.38	1351.00	7886.10	36320.91	2050.82	3376.44	5177.33	34865.44	1931.74	46144.74
W-5	37072.80	5472.00	1960.05	7437.05	39017.05	2050.71	3526.54	6370.30	32443.35	2734.52	47005.77
E-9	25646.41	6696.27	1960.05	8635.32	35740.14	2045.26	2570.26	4610.61	31811.83	139.44	34007.17
E-8	23432.59	6169.61	1960.05	8120.68	29947.03	1625.13	1737.11	3411.04	2052.91	1492.31	37003.57
E-7	19601.57	5628.09	1960.05	7508.14	25515.42	1401.51	1191.03	4521.35	2752.27	1498.23	29503.00
E-6	16223.05	4938.70	1960.05	5898.75	21434.12	1159.95	879.13	1907.17	19435.21	1331.29	24973.00
E-5	13331.60	4107.43	1960.05	5067.48	17616.56	953.21	565.16	1550.77	16000.19	1132.51	20555.72
E-4	11909.53	3164.19	1960.05	5124.24	14824.74	861.53	659.09	1510.52	13313.11	977.04	18010.01
E-4	11516.91	3164.18	1960.05	5124.23	14322.09	751.96	442.62	1194.50	12717.31	946.13	16027.27
ALLE-4	11093.02	3164.19	1960.05	5124.24	14008.81	749.19	532.27	1125.46	14634.53	837.36	17200.22
E-3	9550.47	2738.91	1960.05	4698.96	11517.43	603.43	462.35	1165.78	10351.64	867.44	15124.07
E-2	8856.00	2229.58	1960.05	4109.63	9925.63	639.20	463.38	1090.76	9646.00	737.67	13803.60
E-1	7898.43	1952.48	1960.05	3912.54	8545.83	564.74	351.83	916.57	7629.26	699.33	12510.27
E-1	7300.80	1852.43	1810.40	3762.83	7029.20	522.01	267.42	709.40	7139.76	661.23	11724.88
ALLE-1	7500.00	1952.45	1860.28	3912.73	8134.74	536.25	285.58	831.81	7302.93	673.93	11906.65
ALLE-1	13531.35	3620.07	1952.50	5380.50	15405.31	897.43	842.10	1339.53	14565.77	1041.26	19173.19
ALLE-1	15043.67	4047.82	1805.75	5913.57	18075.03	1070.51	1007.31	2107.53	16717.50	1244.90	22262.22

TABLE 42

**DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1988
FOR OFFICERS AND ENLISTEES BY GRADE**

	ENY	DAVIA	RA5	ALL	CPY	SST	FIT	TO1	DIS	1AD	RTM
C-3	72500.40	6582.40	1378.80	9961.20	73879.20	3379.50	13613.51	16993.01	5686.19	4199.58	86661.18
O-10	72600.40	6527.01	1378.80	9905.83	73079.20	3379.50	13905.21	17284.71	56594.48	4235.87	86642.05
O-9	72500.40	9019.38	1378.80	10398.18	75880.41	3379.50	13600.55	16980.05	56910.36	4401.61	87302.20
O-8	72500.40	9375.14	1378.80	11753.94	77266.33	3379.50	13603.46	16982.96	60303.37	4504.67	87839.01
O-7	63990.00	9462.72	1378.80	10041.52	69326.91	3379.50	11018.68	14446.18	54076.72	4255.94	79087.46
O-6	52991.60	9284.04	1378.80	10762.84	61200.99	3377.53	7781.39	11150.92	50072.07	4233.42	67987.06
O-5	43303.70	8842.11	1378.80	10320.91	52235.22	3237.66	5086.10	8323.77	43911.45	3920.87	57347.48
O-4	35605.21	7988.14	1378.80	4366.94	43389.78	2673.95	3829.25	6503.20	36886.38	2643.39	47615.54
O-3	28748.00	6409.54	1378.80	7788.00	35236.18	2158.98	3075.22	5234.20	30021.98	1826.27	38367.41
O-2	22657.48	5021.16	1378.80	6399.96	27136.76	1701.58	2209.59	3991.16	23743.60	1664.42	30721.86
O-1	16194.76	4170.42	1378.80	5557.22	20797.65	1216.22	1418.49	2034.72	18162.83	1034.02	22786.00
O-3 E	33275.11	6849.97	1378.80	8328.77	40223.33	2498.96	3913.45	6412.41	33810.92	2218.34	43722.22
O-2 E	27035.54	5602.67	1378.80	6981.47	32630.62	2030.37	3169.38	5189.74	27498.08	1910.66	35927.07
O-1 E	21799.69	4087.40	1378.80	6266.20	27106.75	1637.16	2274.61	3911.77	23194.98	1778.67	29844.56
A-10-3	29373.32	6470.38	1378.80	7849.18	35942.28	2205.94	3191.60	5396.94	30545.34	1880.43	39102.93
A-10-2	23087.87	5070.33	1378.80	6457.13	28224.54	1733.80	2376.08	4709.92	24114.57	1688.57	31233.57
A-10-1	18673.63	4238.99	1378.80	5617.79	21336.68	1252.19	1491.64	2743.82	18592.86	1097.64	23389.07
A-1 CO	30794.47	6664.02	1378.80	8062.82	37464.37	2274.84	3436.54	5711.18	31783.14	2248.02	41106.11
M-4	32576.83	7147.57	1378.80	8326.37	39402.84	2446.52	3195.98	5042.50	33759.54	1807.44	42990.54
M-3	27004.48	6386.73	1378.80	7165.55	33278.04	2034.04	2206.72	4280.12	28958.12	1431.03	36301.84
M-2	22635.79	5698.98	1378.80	7077.78	27651.85	1699.95	1661.73	3361.68	24299.37	1334.70	31868.27
M-1	18370.60	4902.82	1378.80	6281.62	23202.43	1374.62	1182.19	2561.82	20640.61	1201.49	25053.60
A-11 MO	24821.61	6022.27	1378.80	7401.07	30516.83	1871.61	2019.24	3890.86	26628.97	1450.19	33772.87
ALL OFF	30428.25	6642.75	1378.80	8021.55	37031.08	2248.50	3348.16	5597.68	31433.42	2199.02	40648.82
M-5	37814.40	5580.00	2000.20	7580.20	39014.60	2839.86	3898.41	6738.27	33076.33	2269.55	47664.15
E-9	29278.53	6799.94	2000.20	8880.14	36509.89	2198.82	2679.78	4878.59	31631.30	1691.25	39769.92
E-8	23883.58	6232.04	2000.20	8232.24	30434.79	1793.65	1766.68	3560.34	26874.46	1523.89	33639.71
E-7	20023.77	5687.70	2000.20	7687.90	26016.77	1503.79	1203.39	2709.17	23307.60	1413.64	29127.30
E-6	16383.12	5012.23	2000.20	7012.43	21935.47	1245.39	819.18	2004.57	18870.90	1261.55	24857.10
E-5	13676.47	4207.90	2000.20	6208.10	18096.31	1027.10	518.76	1645.67	16450.44	1129.43	21014.00
E-4 +4	12149.11	3260.72	2000.20	5260.92	15194.40	912.40	692.54	1604.94	13509.46	943.81	18353.84
E-4 -4	10710.30	3260.73	2000.20	5260.93	13755.59	804.34	570.86	1275.20	12480.40	933.50	16904.53
ALL E-4	11382.03	3260.73	2000.20	5260.93	14427.32	854.79	574.35	1429.14	12998.16	938.21	17581.16
E-3	9759.01	2770.83	2000.20	4771.03	11665.52	732.90	528.06	1260.97	10404.53	824.76	15354.80
E-2	9032.40	2251.04	2000.20	4251.24	10070.54	678.33	497.95	1176.28	8894.26	732.52	14016.15
E-1 +4	8056.80	1975.67	2000.20	3975.87	8705.58	605.07	393.18	990.25	7707.32	668.52	12701.19
E-1 -4	7448.40	1970.61	1848.90	3822.51	8079.70	589.37	308.76	860.13	7211.87	628.89	11899.81
ALL E-1	7651.20	1975.63	1888.00	3873.63	8288.33	674.60	336.90	911.30	7376.82	642.10	12166.93
A-1 FMC	12844.78	3694.86	1982.90	5087.76	16266.88	964.64	674.20	1638.85	14627.24	1015.71	19548.25
ALL MO	16420.79	4126.73	1902.93	6029.66	19308.20	1152.88	1065.94	2218.82	17089.37	1189.07	22639.52

TABLE 43

DETAILED REGULAR MILITARY COMPENSATION TABLE IN 1989
FOR OFFICERS AND ENLISTEES BY GRADE

	RPY	HAQ-VIA	BAS	ALL	CPV	SSY	FTT	TOY	DLS	TAD	ARC
C/S	75499.20	9054.00	1415.32	10409.32	76334.52	3604.80	14204.78	17309.58	59174.94	4438.71	90477.23
O-10	75499.20	9071.63	1415.32	10512.95	77210.36	3604.80	14255.09	17859.89	59410.47	4448.68	90460.83
O-9	75499.20	9552.48	1415.32	10987.80	79019.18	3604.80	13957.84	17562.44	61116.74	4620.80	91107.80
O-8	75474.00	9843.47	1415.32	11218.75	80324.18	3604.80	13914.84	17519.64	62804.52	4752.26	91505.11
O-7	66614.40	10042.27	1415.32	11417.59	72549.38	3604.80	11297.75	14902.55	57646.83	4507.85	82599.64
O-6	55556.24	9725.56	1415.32	11160.88	64246.67	3602.55	8088.22	11690.77	52555.90	4385.52	71102.64
O-5	45127.02	9637.22	1415.32	11072.54	54844.92	3389.04	5236.43	8675.47	46169.45	4211.28	60410.83
O-4	37165.31	8460.50	1415.32	9895.82	45860.16	2791.12	4010.13	6801.25	39058.91	2838.33	49897.47
O-3	29881.47	6691.00	1415.32	8126.32	36561.82	2244.10	3203.84	5447.94	31113.88	1805.94	39913.73
O-2	23042.40	5230.54	1415.32	6665.86	28231.10	1730.56	2320.83	4051.39	24181.71	1718.66	31427.92
O-1	16755.70	4342.06	1415.32	5777.38	21564.53	1238.35	1488.62	2748.98	18817.54	1068.51	23801.60
O-3 E	34642.02	7709.99	1415.32	8645.31	41732.67	2601.61	4084.15	6685.76	35048.90	2338.34	45823.66
O-2 E	28215.07	6070.75	1415.32	7466.07	33997.15	2118.95	3351.32	5470.27	28526.89	2066.52	37747.66
O-1 E	22407.72	5119.03	1415.32	6554.35	27815.07	1682.82	2347.82	4030.84	23784.44	1873.22	30835.30
ALL O-3	30582.99	6767.48	1415.32	8202.80	37323.80	2296.78	3333.58	5670.34	31693.46	1969.36	40755.15
ALL O-2	23604.81	5317.41	1415.32	6752.73	28858.87	1772.72	2432.69	4205.41	24653.40	1756.42	32113.96
ALL O-1	17186.02	4401.22	1415.32	5836.54	22040.41	1290.67	1554.04	2844.71	19195.70	1129.78	24152.34
ALL O	32249.47	7078.55	1415.32	8509.87	39341.67	2306.74	3611.20	5997.95	33343.73	2391.54	43150.88
M-4	33405.58	7265.46	1415.32	8800.78	40704.05	2508.76	3134.65	5843.41	35060.64	1832.27	44038.83
M-3	27503.55	6715.69	1415.32	8151.01	33943.41	2085.52	2218.25	4283.76	29659.64	1495.92	37150.48
M-2	23695.72	5916.06	1415.32	7413.40	28834.42	1779.55	1731.12	3510.66	25323.75	1407.68	32516.78
M-1	19460.62	5227.76	1415.32	6663.10	24744.87	1481.49	1253.71	2715.20	22079.67	1267.88	27351.61
ALL M	25665.76	6288.70	1415.32	7724.02	31497.07	1927.50	3945.22	27551.84	1480.30	34070.08	
ALL M Off	31825.81	7021.90	1415.32	8459.22	38896.04	2357.14	3508.49	5885.64	32970.40	2332.80	42617.13
M/S	39366.00	5886.00	2080.50	7958.50	41446.50	2956.39	4074.90	7031.29	34415.21	2415.58	49748.06
E-9	30450.52	7088.13	2080.50	9168.63	37969.52	2286.83	2708.50	4995.34	32974.18	1732.25	41351.39
E-8	24886.82	6435.67	2080.50	8516.17	31636.17	1868.99	1805.58	3674.56	27941.90	1562.17	34964.98
E-7	20876.78	5846.14	2080.50	7926.64	26912.78	1567.85	1244.38	2812.23	27.05	1455.08	30258.31
E-6	17306.54	5286.61	2080.50	7367.11	22918.51	1299.72	850.69	2150.61	5767.91	1331.82	26079.28
E-5	14276.95	4483.56	2080.50	6564.06	18898.03	1072.20	629.11	1711.31	17188.72	1200.14	22041.15
E-4	12645.69	3497.66	2080.50	5578.16	15766.83	949.69	729.26	1878.95	14087.88	1060.81	19224.88
E-4 -4	11138.68	3497.66	2080.50	5578.18	14249.89	835.77	495.40	1331.16	12918.72	991.60	17898.46
ALL E-4	11875.58	3497.67	2080.50	5578.17	14998.75	891.86	610.54	1502.40	13494.36	988.13	18449.88
E-3	10185.91	3011.43	2080.50	5091.93	12111.63	764.96	550.89	1315.85	10795.78	877.48	16155.32
E-2	9403.20	2440.68	2080.50	4521.18	10651.30	706.18	436.80	1202.98	9448.31	770.61	14894.99
E-1	8388.00	2044.60	2080.50	4125.10	9030.77	629.94	422.95	1052.89	7977.87	696.15	13209.26
E-1 -4	7754.40	2044.54	1923.55	3968.09	8380.65	582.36	334.33	918.49	7464.16	856.78	12779.27
ALL E-1	7865.60	2044.56	1975.87	4020.43	8597.35	598.22	363.74	981.96	7635.39	689.91	12655.93
ALL ENL	13439.87	3936.55	2073.52	6040.07	17002.91	1009.33	703.46	1712.80	15390.12	1073.96	20522.90
ALL OOD	16061.91	4378.86	1982.50	6359.36	20116.68	1201.55	1103.81	2305.06	17811.62	1253.49	23674.76

APPENDIX C

TABLE 44

COMPOSITION OF OUTLAYS IN CURRENT AND IN CONSTANT 1982 DOLLARS (1971-1982)

Category	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
In Millions of Current Dollars												
Total outlays	210,172	230,641	245,707	269,359	332,337	371,779	409,763	453,729	503,444	580,970	678,709	745,706
National defense ¹	78,872	79,174	76,681	79,347	86,509	85,619	97,211	104,495	116,342	133,995	152,513	185,309
Nondefense	131,300	151,467	169,026	190,017	245,828	282,160	311,962	354,234	387,102	446,975	526,196	560,397
Payments for individuals	80,412	92,892	104,524	120,137	153,519	180,132	196,321	210,986	232,878	272,487	323,413	356,779
Direct payments *	(70,030)	(79,112)	(90,866)	(105,557)	(137,074)	(150,492)	(174,144)	(186,811)	(206,024)	(245,569)	(276,482)	(310,863)
Grants to State and local governments	(10,381)	(13,780)	(13,664)	(14,581)	(16,445)	(19,640)	(22,171)	(24,175)	(26,854)	(31,927)	(36,931)	(37,875)
All other grants	17,683	20,550	28,176	28,717	33,712	39,865	46,141	53,655	55,911	59,431	57,756	50,232
Net interest *	14,841	15,478	17,349	21,449	23,744	26,716	29,886	35,441	42,615	52,512	64,734	81,975
All other *	28,471	32,171	32,437	35,467	49,390	50,335	54,633	69,872	73,194	87,437	98,834	94,511
Undistributed offsetting receipts *	-10,107	-9,583	-13,409	-16,749	-13,602	-14,306	-14,873	-15,720	-17,416	-19,942	-28,041	-26,079
Total nondefense	131,300	151,507	169,076	190,017	245,824	282,160	311,962	354,234	387,121	446,975	526,196	560,397
In Billions of Constant (FY 1982) Dollars												
Total outlays	599.4	527.6	527.5	528.7	586.0	609.8	627.6	652.2	660.2	699.1	726.5	745.7
National defense ¹	202.7	190.9	175.1	163.3	159.8	153.6	154.3	155.0	158.1	164.0	171.4	185.3
Nondefense	396.7	336.7	352.4	365.4	426.2	456.2	473.3	497.2	502.1	535.1	555.2	560.4
Payments for individuals	181.0	200.1	215.7	228.4	265.8	291.7	295.5	296.8	301.6	329.7	344.3	356.7
Direct payments *	(157.7)	(170.4)	(187.5)	(200.7)	(237.4)	(259.9)	(262.1)	(262.8)	(266.8)	(282.3)	(305.0)	(318.9)
Grants to State and local governments	(23.4)	(29.7)	(28.2)	(27.1)	(28.5)	(31.8)	(33.4)	(34.0)	(34.8)	(37.4)	(39.3)	(37.9)
All other grants	43.3	47.4	60.5	56.8	58.5	64.3	70.1	75.7	71.8	68.4	61.3	50.3
Net interest *	34.0	33.6	35.9	41.1	43.0	43.0	44.6	49.4	54.7	62.0	73.7	85.0
All other *	75.7	79.7	68.3	71.8	84.9	80.1	79.9	96.9	95.9	103.8	106.0	94.5
Undistributed offsetting receipts *	-27.3	-24.1	-28.1	-32.8	-23.4	-22.9	-21.7	-21.7	-22.9	-23.8	-30.1	-26.1
Total nondefense	306.7	336.7	352.4	365.4	426.2	456.2	473.3	497.2	502.1	535.1	555.2	560.4

TABLE 45

COMPOSITION OF OUTLAYS IN CURRENT AND IN CONSTANT 1982 DOLLARS
(1983-1995)

Category	1983	1984	1985	1986	1987	1988	1989	1990 estimate	1991 estimate	1992 estimate	1993 estimate	1994 estimate	1995 estimate
In Millions of Current Dollars													
Total outlays	808,327	851,781	946,316	990,258	1,007,830	1,064,044	1,142,643	1,197,236	1,231,331	1,271,479	1,321,819	1,397,976	1,476,941
National defense ¹	209,903	227,413	252,748	273,375	281,999	296,361	303,559	296,342	301,251	309,212	311,892	315,669	318,567
Nondefense	598,424	624,368	693,568	716,882	725,831	767,683	839,084	900,894	930,080	962,266	1,009,926	1,082,306	1,158,373
Payments for individuals	395,351	399,821	425,637	449,439	469,474	498,758	534,144	577,769	609,912	650,665	694,419	738,789	782,930
Direct payments *	(353,715)	(355,537)	(377,547)	(396,603)	(413,072)	(437,716)	(468,273)	(503,198)	(529,207)	(563,800)	(601,509)	(639,186)	(676,355)
Grants to State and local govern- ments	(41,636)	(44,284)	(48,090)	(52,836)	(56,352)	(60,981)	(65,972)	(74,571)	(80,764)	(86,865)	(92,910)	(99,603)	(106,575)
All other grants	50,773	53,198	57,650	59,345	51,847	54,175	55,679	59,013	62,984	63,718	62,112	62,218	62,497
Net interest *	89,774	111,058	129,430	135,969	138,570	151,748	169,137	175,591	172,979	163,482	156,963	147,761	136,145
All other *	96,501	92,748	113,550	105,137	98,445	106,019	117,385	124,982	127,723	129,525	142,649	180,108	276,341
Undistributed offsetting receipts *	-33,976	-31,937	-32,698	-33,007	-36,455	-38,967	-37,312	-36,682	-43,578	-43,833	-46,177	-46,570	-49,540
Total nondefense	598,424	624,368	693,568	716,882	725,831	767,683	839,084	900,894	930,080	962,266	1,009,926	1,082,306	1,158,373
In Billions of Constant (FY 1982) Dollars													
Total outlays	715.0	788.1	849.6	868.0	858.0	879.6	907.1	912.7	900.8	892.5	893.4	912.6	933.9
National defense ¹	201.3	211.3	230.6	244.0	251.0	252.9	255.9	240.5	235.5	238.7	224.0	219.1	214.3
Nondefense	513.6	576.7	619.0	624.0	607.0	626.7	651.2	672.2	665.3	653.8	669.4	693.5	719.6
Payments for individuals	378.6	368.7	380.0	390.6	392.2	399.8	410.3	426.7	432.7	444.3	457.2	479.5	483.6
Direct payments *	(328.7)	(327.9)	(337.1)	(344.8)	(345.2)	(350.9)	(359.7)	(371.7)	(375.5)	(385.0)	(396.1)	(407.1)	(417.8)
Grants to State and local govern- ments	(29.9)	(40.8)	(42.9)	(45.9)	(47.1)	(48.9)	(50.5)	(55.0)	(57.3)	(59.3)	(61.2)	(63.4)	(65.3)
All other grants	48.6	49.3	51.0	50.9	43.3	43.4	42.6	42.9	43.3	40.7	38.6	37.0	35.7
Net interest *	86.1	102.7	116.0	118.7	117.4	124.8	133.5	133.2	126.0	114.5	106.0	96.5	86.2
All other *	92.6	85.6	101.7	92.3	84.8	88.9	93.8	96.2	94.7	92.7	98.4	119.6	165.2
Undistributed offsetting receipts *	-32.5	-29.4	-29.0	-28.6	-30.8	-30.2	-29.1	-27.4	-31.4	-30.4	-30.9	-30.1	-31.1
Total nondefense	513.6	576.7	619.0	624.0	607.0	626.7	651.2	672.2	665.3	653.8	669.4	693.5	719.6

DESCRIPTION OF ABBREVIATIONS USED AS COLUMNAR HEADINGS

<u>COLUMNAR HEADING</u>	<u>DEFINITION</u>
GS	General Schedule Civilian Employee
GM	General Schedule Civilian Employee (Managerial Positions)
WG	Wage-Grade Civilian Employee
WS	Wage-Grade Civilian Employee (Supervisory Positions)
WL	Wage-Grade Civilian Employee (Leadership Positions)
BPY	Base Pay
BAQ	Basic Allowance for Quarters
BAS	Basic Allowance for Subsistence
ALL	BAQ + BAS
CPY	BPY + BAQ + BAS
SST	Social Security Tax
FIT	Federal Income Tax
TOT	SST + FIT
DIS	Disposable Income (CPY - TOT)
TAD	Tax Advantage
RMC	Regular Military Compensation (CPY + TAD)

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